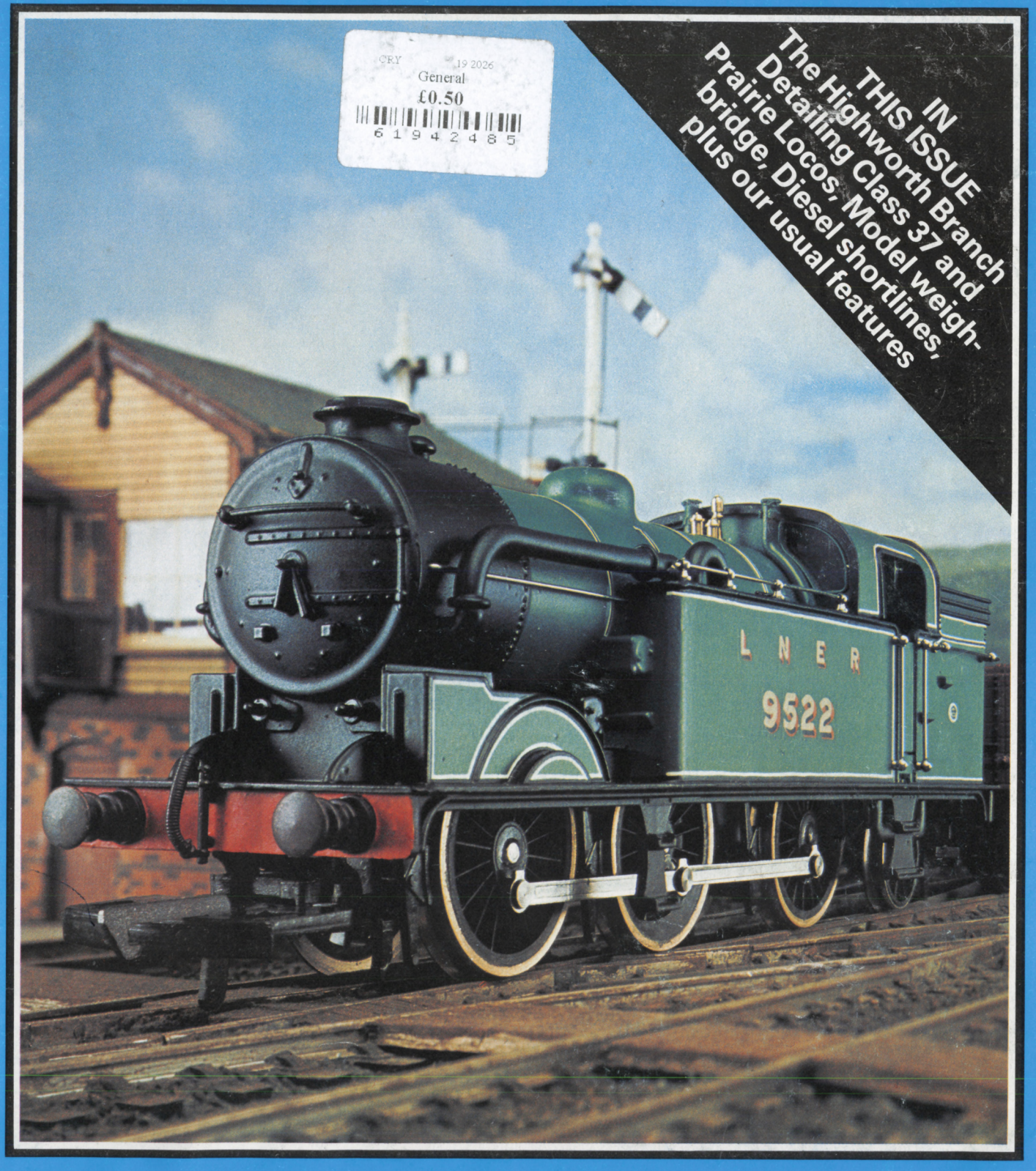
MODEL TRAINS

55p

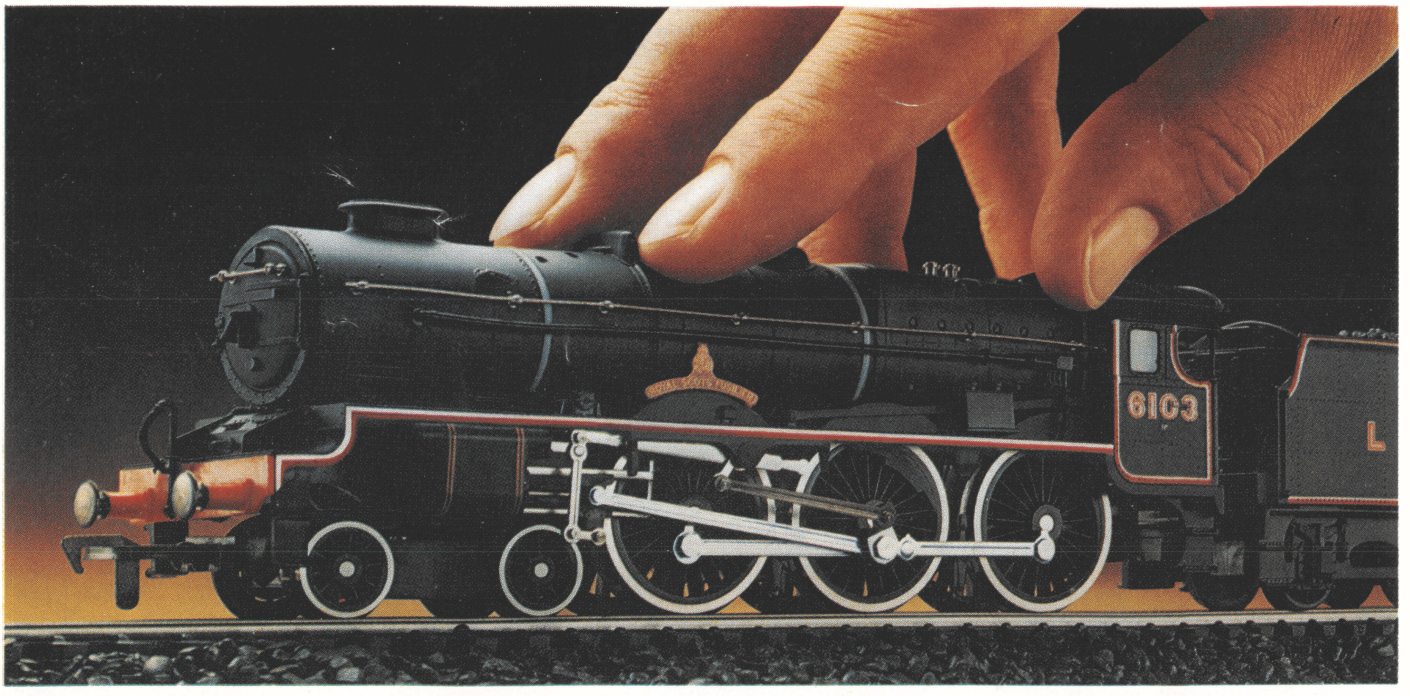
AIRFIX

JANUARY 1981



CRY 19 2026
General
£0.50
6 1 9 4 2 4 8 5

IN THIS ISSUE
The Highworth Branch
Detailing Class 37 and
Prairie Locos, Model weigh-
bridge, Diesel shortlines,
plus our usual features

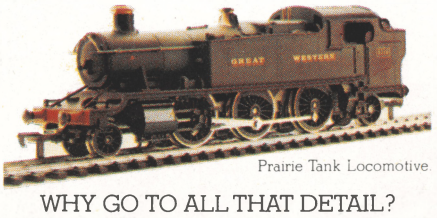


WE HAVEN'T ENGINEERED BRITAIN'S BEST TRAIN SETS JUST SO CHILDREN CAN PLAY WITH THEM.

GMR stands for Great Model Railways: the name of a new, remarkably superior range of train sets.

GMR are made by Airfix and we're already famous for the breathtaking accuracy of a whole range of models.

So when we decided to turn our engineering skills to train sets, the result was a standard of authenticity never seen before.



Prairie Tank Locomotive.

WHY GO TO ALL THAT DETAIL?

It wasn't simply because we are Airfix and we've always believed our models should look like the real thing.

We had also unearthed some interesting facts: The first was that model trains are the country's fastest-growing hobby amongst children and adults.

From ordinary folk to Bishops and Dukes, people are giving in to that suppressed urge to run a railway.

They have been pleading — or in some cases, praying — for far more authentic models than they had been offered in the past.

Some had even taken to modelling Continental Railways because they believed that European models were superior to British. Bad show that.

The second was that modern children demand detail and accuracy to a degree that may surprise you.

And, thirdly, train sets are bought by fathers, and fathers told us that they expected to get as much fun out of them as their sons.

We simply thought they would be more likely to buy real models that were also tough enough to be toys, than toys that could never be real models.

THE LMS ROYAL SCOT SET — EUSTON-GLASGOW CIRCA 1945

The Royal Scot set is typical of GMR. It is as close to the real thing as we can get it.

The loco, the 'Royal Scots Fusilier' is built from the same plans as the original.

We've hand-assembled each loco superstructure alone from thirty-nine separate parts.

It is powered by a precision 'ringfield' motor that's as smooth at a scale walking pace as it is at one hundred miles an hour.

The coaches are equally authentic with full detail and corridor interiors.

Coupled together, it's a stunningly accurate model of the 'Royal Scot' as she pounded up from Euston to Glasgow around 1945.

GMR SETS — EVERYTHING BUT THE PLUG

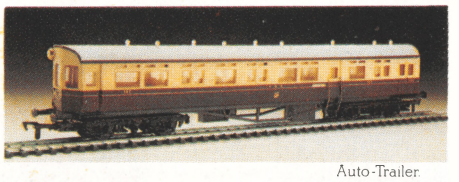
One of the cruellest sights on a Christmas morning is a child with a train set that can't go because it isn't complete.

GMR give you everything you need to start playing the minute the paper's off. We give you a mains controller/transformer, free.

All you have to do is put on a plug.

We give you a station, a bridge and a signal box made from sturdy card to lend instant atmosphere.

And we give you enough track to get you going; some sets even have points and sidings.



Auto-Trailer.

EIGHT SETS COVER THE COUNTRY

There are seven other GMR sets available now. They cover everything from local steam goods trains to modern Inter-City diesels.

Each set contains a complete train recapturing the real thing.

There are also many other model railway products made by Airfix from complete sets to individually boxed locos, carriages and wagons.

They are all of the same high standard as those bearing the GMR label.

Euston-Liverpool	LMS	1956	Goods
St Pancras-Sheffield	BR	1972	Inter-City
Paddington-Didcot	GWR	1934	Passenger
Kings Cross-Newcastle	BR	1957	Express Goods
St Pancras-Leicester	LMS	1936	Passenger
Paddington-Birmingham	BR	1948	Goods
Paddington-Penzance	GWR	1934	Passenger

GMR
GREAT MODEL RAILWAYS

PRECISION MADE BY AIRFIX

MODEL TRAINS

January 1981

AIRFIX

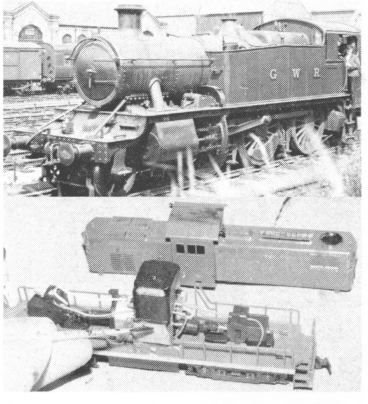
VOLUME 2 NUMBER 1

Editor **Chris Ellis**
Assistant Editor **Heather Rawlings**
Art Editor **Ralph Laughton**

Editorial address
4 Surbiton Hall Close,
Kingston, Surrey,
England.
Telephone (01) 546 0758

ABC

MEMBER OF THE AUDIT BUREAU OF CIRCULATION



Top: *No 6118 in lettered GWR green finish in 1947 introduces our Prairie feature on page 37. Tiny SHL on the footplate valance above the cylinder indicates the depot, Southall.* **Above**: *One of the locos we suggest for a modern American short line is the Mehanotehnika Alco C-415. Here we are repainting it for short line service—a coat of green and yellow for the body while the metal weight inside the cab is painted matt black. See the finished paint job in the article beginning on page 43.*

CONTENTS

Editor's Desk 5
Notes, news and comments

Matters Arising 5
On the subject of signals

Weigh-bridge and Weigh-office 12
Essentials for a goods yard, by John Flann

Bookshelf 13
Recent publications of interest to modellers

Western Mining Co 14
More scenic work, and development potential

Test Track 18
New Hornby locos and two from USA

Trainlines 21
Letters and comments from readers

More than an Oval 22
Completing the Kemperly goods shed, by Ralph Laughton

Detailing the Class 37 25
Getting to grips with the Hornby model

Basis for a Layout - the Highworth Branch 30
Greg Heathcliffe takes a long look at the potential of this GWR line

Super-detail for the Prairie Tank 37
Mike Wightman does some more work on the Airfix model

The Westport Branch 40
Michael Andress makes the bay area and the water

Diesel Short Lines 43
The modelling potential of modern era short lines, by Chris Ellis

Shopwindow
New products, new models, new kits, assessed and reviewed

On the cover
Just about now the long awaited Airfix 00 gauge LNER N2 class 0-6-2T is due for release and here is a fine 'official' picture of the LNER version (it also comes in BR black) in the green livery carried by the locomotive modelled by Airfix. Most were black, even in LNER days. The N2 model should be both popular and useful for it was used on both suburban passenger and freight duties.

Advertisement Representatives
Jackson-Rudd and Associates Limited,
Oldebourne House, 46/47 Chancery Lane,
London WC2A 1JB
Tel: 01-405 3611

Advertisement Manager
Brian Harriss

©All articles and illustrations published in MODEL TRAINS are strictly copyright and may not be reproduced without written permission from the Publishers. The Editor welcomes the submission of editorial material, which should be accompanied by return postage. Though every care is taken, the publishers cannot accept responsibility for safe keeping of editorial contributions.

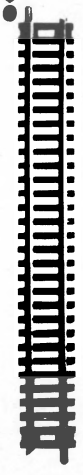
Circulation Department
Wells, Gardner, Darton and Co, Ltd,
Faygate, Horsham,
Sussex. *Tel: Faygate 444.*
Typeset by Keyset Video Ltd.,
Eltham, London SE9,
and printed by Blackfriars Press Ltd.,
Leicester, England.

MODEL TRAINS is published for the proprietors Airfix Products Limited, by Kristall Productions Ltd., on the second Friday of each month. Annual subscription rate £9.20 (USA $22) from Wells, Gardner, Darton and Co Ltd. Second Class postage paid at New York Post Office, NY.

Before you buy track read this!

Brand X
length 16.5cm
Coated Steel
40p

Brand Y
length 20.5cm
Brass
65p



Hadley's Budget Brand
length 22.8cm
Brass
22p

The two brands of track on the left are of the highest quality and in our opinion represent excellent value for money. We stock in depth every well-known maker's range of model railway track that are worthy of your consideration as a serious modeller.

The new track on the left is our own brand, a direct import, it is made of brass, a material that is corrision-proof and has very low electrical resistance. The rail is mounted on high-quality plastic wood-grained sleepers.

The gauge of metal used is measurably lighter than Fleischmann track — but only just, and in our view is every bit as servicable.

It is made in Hong Kong, and in the UK is only available from us. Length for length it costs a good deal less than flexible of any make. If your conscience demands a British-made product may we recommend the excellent Peco range.

AT OUR PRICE THERE HAS TO BE A CATCH!

There are — TWO!

1) Though fully interchangeable with other rigid plastic sleeper track systems at present we can only offer you 22.8cm (9ins.) straights and 23.5cm length, 57cm radius curves — slightly larger than a Hornby R.605 curve.
2) The track is only available in bundles of 10 straights and 12 curves — a complete circle.

IF YOU ARE PLANNING A NEW LAYOUT OR AN EXTENSION — ORDER NOW WHILE STOCKS LAST.

Even if your existing layout is steel or nickle silver you can use our budget track where it is out of sight behind scenery, in fiddle-yards, or for the ultimate in realism we suggest that the sides of all your track should be "weathered" with a touch of rust colour, a vast visual improvement that will take care of colour differences.

TO ORDER PLEASE SEND £2.20 PER PACK OF STRAIGHTS AND/OR £2.64 PER PACK OF CURVES. ADD 20p PER ORDER POST AND PACKING. CREDIT CARDS GLADLY HONOURED.

BUILD A HORNBY RAILWAYS LAYOUT SAVE 25% OFF THE MAKER'S R.R.P.

We have put together a special package deal.
ALL THE TRACK, POINTS & UNDERLAY you need to complete each of the layouts in the Hornby Track Plans Book No. 5
IF YOU NEED A TRACK PLAN BOOK SEND 50p inc P.P.

	R.R.P.	our price
Plan 1/5 page 10	£14.90	£11.10
Plan 2/5 page 10	£23.60	£17.50
Plan 3/5 page 11	£35.07	£26.10
Plan 4/5 page 12	£68.82	£51.50
Plan 5/5 page 12	£116.27	£87.00
Plan 6/5 page 13	£77.83	£58.10
Plan 7/5 page 14	£106.83	£80.00
Plan 8/5 page 15	£151.76	£113.50
Plan 9/5 page 16	£121.42	£90.00
Plan 10/5 page 17	£139.87	£104.50
Plan 11/5 page 18	£140.81	£105.50
Plan 12/5 page 19	£138.70	£104.00
Plan 13/5 page 20	£123.63	£92.50
Plan 14/5 page 21	£156.22	£117.00
Plan 15/5 page 22	£119.51	£89.50
Plan 16/5 page 23	£108.93	£81.50
Plan 17/5 page 24	£23.72	£17.60
Plan 18/5 page 26	£248.09	£185.00
Plan 19/5 page 28	£96.59	£72.00
Plan 20/5 page 29	£135.88	£101.50

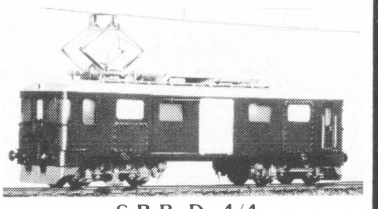
The only items excluded from these package deal prices are station equipment, trackside buildings and control centres. We will be pleased to allow 25% discount off these additional items as listed on pages 38/39 of the Hornby track plan book No 5 provided they are ordered with track as listed above. Please add £1.00 post and packing on orders under £50.00.

STOP PRESS

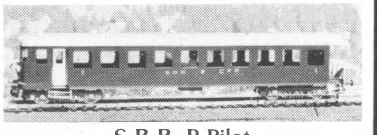
Hornby APT set **£59.00** P&P **£2.00**
New Hornby Catalogue
14 new locos and more
send **£0.75** incl. P&P FREE
DISCOUNT VOUCHER.

Metropolitan NEW ITEMS

PLM 2-C-C-2
£250



S.B.B. De 4/4
attractive red livery
£160



S.B.B. P Pilot
£90.00

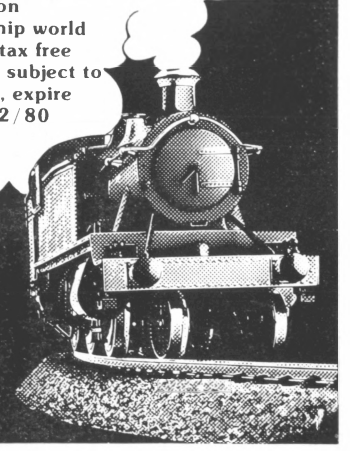
We are the sole UK importer of this fine range of exclusive models. Large selection on show, including incredible highly detailed Swiss UIC pre-war coaches with lighting only £19.50, BLS Simplon car wagons £12.95 and car loading wagons £18.75 per pair.

SPECIAL OFFER
This month only
20% off any Metrop loco
from stock.

L.G.B.

London's best selection at lowest prices?

We take HOBBYCARD-BARCLAYCARD ACCESS-DINERS-AMERICAN EXPRESS & MONEY!
MON-FRI 9am-6pm
SUNDAY 9.30am-2pm
We are just by Liverpool St. Station
We ship world wide tax free offers subject to stock, expire 14/12/80



HADLEY HOBBIES

The City of London's one-stop Model Shop

Come to 131 Middlesex Street, Bishopsgate, E.1. and see for yourself. Or phone 01-283 9870

ZERO 1 **A FACT!**

A Master Controller will switch up to 99 motorised points, any make, at low cost and with the simple addition of a R956 point module, each switches 4 points.

So if you already have a large layout or a big loco stud and have not considered a complete change economic, why not simplify your point switching and signalling by using a master controller as a compact single key board unit. Either a H & M 5000 or Zero 1 will do the job. One two wire circuit will get rid of the maze of wire under your layout and your existing track wiring, and block control system for for loco power remains unaltered.

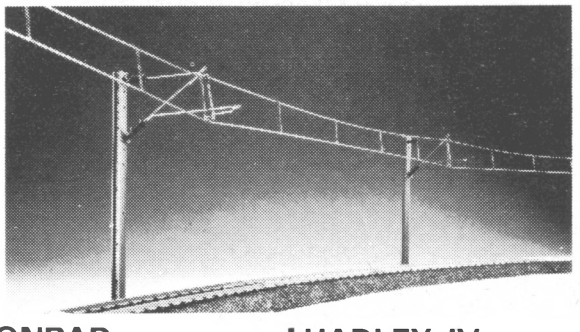
You will then be in a position to take full advantage of the ZERO 1 L.E.D. ILLUMINATED "MIMIC" TRACK PLAN SYSTEM to be made available in 1981 and be able to operate your layout with full size modern signal box realism.

BUY FROM THE EXPERTS — see our display at the Science Museum.

Zero 1 Master £39.95 +£1.75 p&p
H & M 5000 £79.00 +£1.75 p&p
Loco modules 4 for £27.00 +50p p&p
Slave Controller £11.25 +75p p&p
Point module £13.00 +50p p&p
maximum p&p £1.75 per order

all goods offered subject to availability, offers expire on publication of next months magazines and subject to any makers increases announced after January 1st 1981

AT LAST!
A track system that looks like a Railway,
A budget Catenary that looks real



CONRAD
oo/ho track

an accurate profile nickle silver rail — code 80 — only 2.3mm high but accepts all but the crudest HO/OO wheels. The sleepers look genuine and the rigid moulded ballast perfectly simulates granite chippings, joins are almost impossible to spot. 5 radius of curve — all usual point formations possible economical geometry, costs only fractionally more than flexible or settrack systems by the time you have ballasted, pieces can be used again and again, as used in London Science Museum display,

SEND ONLY £1.20 for Catalogue/planning manual with free track sample. SPECIAL 20% DISCOUNT OFFER ON YOUR FIRST ORDER

HADLEY JV
CATENARY

Several types cf mast available. Metal or plastic. Plastic masts also available as KITS. Very British in appearance. Fully detailed and robust. Easy to erect. Wires are fine nickle silver rodding and soldered — not pressings. Wide selection of wire lengths, correct tension and stagger links, straining and drop wires.

SEND 40p for descriptive pamphlet and price list. SPECIAL 10% DISCOUNT ON YOUR FIRST ORDER

Credit Cards gladly accepted

HADLEY HOBBIES
The City of London's one-stop Model Shop
131 Middlesex Street, Bishopsgate, E.1. Or phone 01-283 9870

PUFFERS STEAM BACK

We welcome all old and new friends to visit us and browse amongst our stocks:

Ready-to-run Model Railway Systems by:
Hornby, Hornby Minitrix, Mainline, Airfix, Lima, Roco, Grafar.

Loco, Rolling Stock Kits & Fine Scale products by:
K's, Wills, Nucast, Craftsman, G.E.M., Cavendish & Romford Products, M.T.K., P/C, M.G.W., Jackson, D.J.H., Mikes Models, Ratio, Wrenn, Millhome, W. & T., Kenline Lamps.

Scenic Accessories & Lineside Building Kits by:
Pola, Heljen, Builder-Plus, Superquick, Prototype, Gilmour, Merit, Railroad Scenic, Peco.

Control Equipment by:
Hammant & Morgan, Digitol, Relco, Zero 1 by Hornby.

Modelling Materials and Transfers by:
Kingsprint, Kings Cross numberplates, L.F.C. numberplates, Plasticard, S.M.S. Transfers.

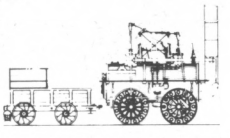
Tools and Equipment:
Humbrol brushes, Airbrushes by Humbrol and Badger, plus drills, taps, dies and precision drills.
Huge stocks of paints and glues by Precision Paints, Gloy and Humbrol. Large selection of modelling books. 100's of secondhand and collectors items in Hornby, Hornby 'O', Hornby Dublo, Bassett Lowke, Bing, Triang Railways, Dinky and Matchbox toys, etc.

New Ranges in stock for 1981:
Joueff, Buildings, Arnold 'N', Fleischmann HO & N, Faller, Noch, Preiser.

Part Exchanges welcome. All secondhand models bought for instant cash!

World Wide Mail Order — send large s.a.e. for FREE list with full details. Access, Barclaycard, Diners Club, Hobbycard and Amex accepted.

puffers *THE MODEL RAILWAY SPECIALISTS*
Goroleen Ltd., 134a Kenton Road, Harrow, Mddx HA3 0HG. Tel: 01-907 3521.

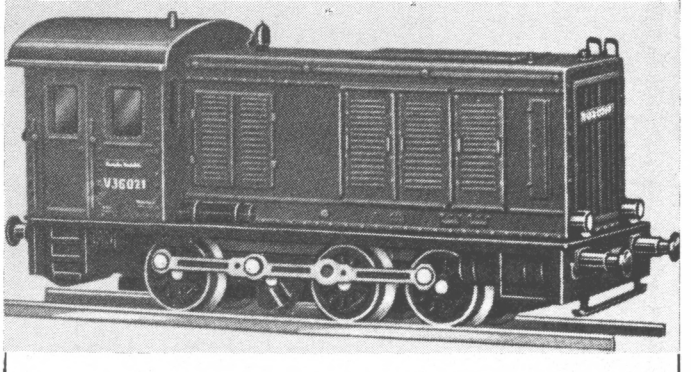


Opposite Kenton Station (Bakerloo and Watford/Euston lines). Northwick Park Station on Met. line five mins. walk away.

Open: Mon-Wed 10.30-6pm. Thurs 10.30-7pm
Fri 10.30-8pm. Sat 9.30-6pm

Berliner TT Bahnen

THE ONLY READY TO RUN TT SYSTEM AVAILABLE



V 36 £10.75 INC. VAT
S.A.E. FOR LIST

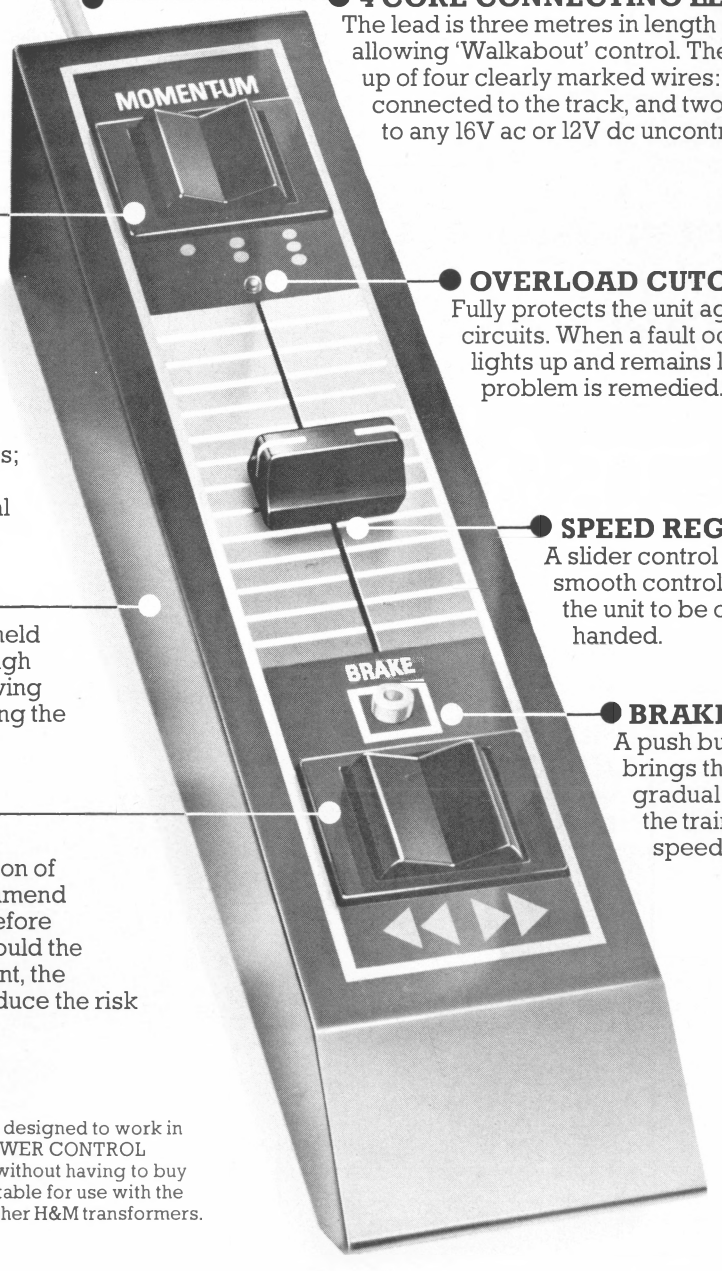
EASTERN MODELS
TT DEPT.
91 OTLEY DRIVE
GANTS HILL, ILFORD, ESSEX IG2 6QY
Telephone (01) 518 1724 (Evenings)

SHOWROOMS FOR PIKO, VERO AND MEHANOTEHNIKA AT 166 THREE BRIDES RD, CRAWLEY, SUSSEX. OPEN 10AM-5PM. EARLY CLOSING WED. & SAT.

After your Christmas dinner try
a pick-me-up from Hammant & Morgan

The HM Walkabout

AN ELECTRONIC CONSORT UNIT THAT PUTS PRECISE CONTROL IN THE PALM OF YOUR HAND



4 CORE CONNECTING LEAD
The lead is three metres in length (approx 10ft) allowing 'Walkabout' control. The cable is made up of four clearly marked wires: two are connected to the track, and two are connected to any 16V ac or 12V dc uncontrolled outlet.

MOMENTUM CONTROL
This control has three basic settings. The minimum level allows instant response for shunting; a middle setting gives a short delay in the build-up of power for passenger trains; and a maximum setting giving a longer delay, ideal for heavy goods trains.

OVERLOAD CUTOUT
Fully protects the unit against short circuits. When a fault occurs, the LED lights up and remains lit until the problem is remedied.

SPEED REGULATOR
A slider control which permits smooth control, and enables the unit to be operated single-handed.

DURABLE CASE
Light and designed to be held in either hand; made of tough thermoplastic material, giving you years of pleasure 'riding the footplate!'

BRAKE CONTROL
A push button that either brings the train to a gradual halt or slows the train to the desired speed.

FORWARD/OFF/REVERSE SWITCH
A switch to change direction of travel. H&M always recommend bringing a train to a halt before changing direction but should the operator overlook this point, the switch compensates to reduce the risk of damaging you motor.

This electric controller has been designed to work in conjunction with the HM 3000 POWER CONTROL MODULE to control extra trains without having to buy another transformer. It is also suitable for use with the FLYER, CLIPPER, DUETTE and other H&M transformers.

Hammant & Morgan Limited, Apem Estate, St Albans Road, Watford, Herts WD2 4AW. Tel: Watford 21253

H&M

Editor's desk

Mr Ian Mealor, a Lancashire man from Bolton, is seen accepting his new model locomotive, the Duchess of Montrose, *from Mrs Anne Ritchie, chairman of Bassett-Lowke Scale Models Ltd, at the Northampton Works. It is in number one gauge and has taken six months to build. The model loco will be added to the layout which is being constructed in the garden of Mr Mealor's Bolton home. He shares his hobby with his father, a retired engineer.*

Bassett Lowke continues its live steam tradition, even today, for those who can afford this type of model.

Off we go into our second volume, and in terms of dates on the cover it is the first issue of 1981 though in reality it is put on sale in 1980 and this editorial is written in November! It seems a good idea here to catch up on a few matters arising, and the first of these is, naturally enough, 'Matters Arising', which started without any fanfare in the December 1980 issue. We get far more letters than we have room to publish — though all are read and most are answered if not published — so where a lot of comments are received on particular subjects I thought it worth devoting some column inches away from the letters page where we can either summarise the general comments or chip in with some explanations. Such was the case in the last issue where numbers of readers had written in asking how to get models of American trains following up some of our previous articles. Our signal series brought forth more letters than we can even answer individually let alone publicise... for though Dave Larkin is by profession a signalman on the Southern Region of BR — and was also attempting to simplify a very complicated subject — it became evident from letters we received, many from signalmen elsewhere in Britain, that there are regional variations in procedures which neither we nor Dave Larkin had expected. So this month's 'Matters Arising' tries to sort out comments to date, and the main part of it comes from the best of several similar letters received. We'll resume Dave's series next issue. 'Matters Arising' is not planned to be monthly, but we'll run it when ever it's needed.

One or two readers have pointed out that we don't always feature the articles we promise for the next issue. Well, when we 'trail' these we intend to run the, but as we are writing the editorial well ahead of the following issue we sometimes get our hopes dashed for technical reasons. We may find (and often do) that an article we promised has, say, five pages and that when all other promised articles are fitted in there are only three pages left. Rather than cut back we usually substitute a shorter article and hold over the promised article to the next issue. In this issue a short line article promised for the 'near future' last May finally makes it which will, I hope, please those who have written in to query its fate! Next issue we hope to run a N gauge layout article which was intended for last February but which has been squeezed out until now. Practical articles include a Midland MPD, long term 'Warship' report and details, easy 1400 class tank engine conversion, plus Jack Kine on scenic tricks and a great deal more including continuation of our various project and regular features. Check up on our promises by joining us for the next issue!

Several readers who purchased our MODEL TRAINS binder asked about self-adhesive date stickers (1980, 1981, etc) to put on the spine of the binder. Well the binder is supplied with a plain panel for the date, but we have now arranged for a supply of 'gold block' self-adhesive date stickers which you affix yourself. If you want a date sticker with your binder please add another 20p to your remittance and state clearly the year you require. If you already have binders and want stickers, send us 20p per sticker and a SAE marked with the date(s) you want.

Space is tight this month (though to us it always is — we could easily publish more each month than space allows) so let me end by wishing all readers a Happy Christmas and Good Modelling for 1981.

Chris Ellis

Matters arising . . .

'. . . on signals and shunting'

There has been a lot of disagreement over Dave Larkin's explanation of the signalling of shunting and other movements in part 3 of the 'Basic Signalling' series. With the exception of his error in omitting the safety trap points from the diagrams included in this article, Dave, who has been a signalman on the Southern Region of BR for 15 years, assures us that the practices and working methods that he described were those that he has personally been involved with in his career. However, he also states that the signalling of the Southern Region was in many cases different to the rest of the country and thus he may have given a false impression of the more normal practices. Mick Nicholson, who is a signalman on the North Eastern Region in the Hull area, has kindly written in with details of the more common arrangements for controlling shunting and similar movements. Mick writes:

'The arrangement of Dave Larkin's Fig 1 on page 559 is odd, if not practically unlikely (we must remember that there is always the odd exception). The most likely place to find a track layout of this nature would be in a station 'throat' or goods yard. Remember, up to recent years the dreaded facing point was kept to a minimum. Diagram Fig 1A shows a much more likely arrangement. Signal No 1 would be cleared for a movement into the siding, No 2 being cleared for a mainline movement, and finally for a facing move on to the Down Main Ground Disc No 3.

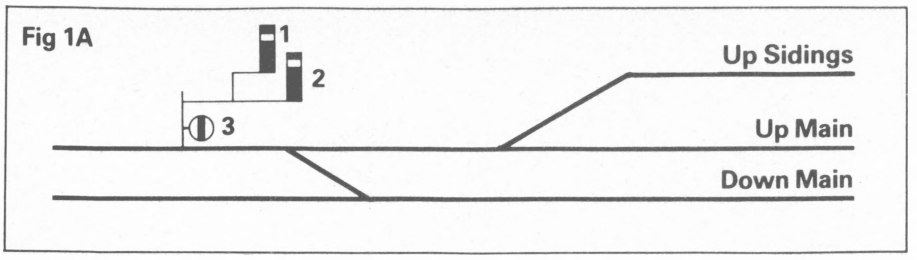
Fig 1B again shows the same track layout but this time assuming a station and bi-directional running on the down platform. Our signals now become a 3-way bracket, with the ground signal replaced by a normal semaphore, or alternatively, one stop signal could be provided fitted with a 3-way route indicator. Hornsea, East Yorkshire was originally signalled as in Fig 1B, then in the 1950s it was signalled as described with one signal and a route indicator.

Yet a further variation is shown in Fig 1C when one signal is used to read on to all three movements. This is achieved by 'detection' and would only be found on goods lines and for shunting moves not involving passenger trains; often a ground disc signal is used for the same purpose.

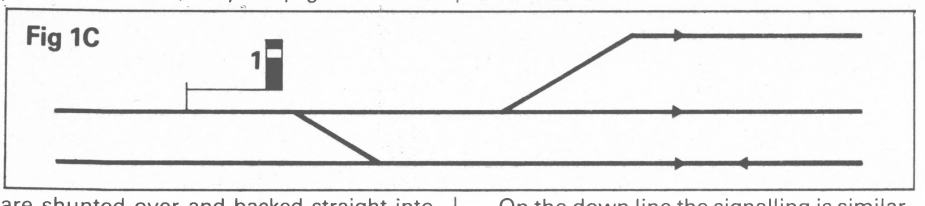
Fig 1D shows a more likely track arrangement, the facing cross-over being replaced by a trailing one. Now any trains leaving the up sidings in the down direction can gain the correct road in one simple movement. Similarly, down trains wishing to back into the up siding can do so in one simple move. This time we are shown the down line signals.

I am afraid that I can make very little sense of Dave Larkin's Diagram 2 on page 559. I presume during the redrawing for reproduction some errors may have crept in. As printed, the up home signal serves no useful purpose as it is shown in advance of the facing cross-over it is supposed to protect. Also there is no purpose in the up starter having a disc signal attached.

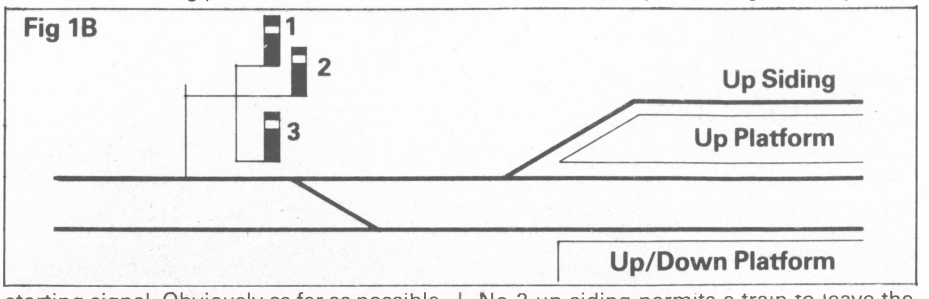
My diagram Fig 2A shows a more practical arrangement. Starting on the up line, the outer home signal is provided a minimum of 440 yards to the rear of the home



signal. In the prototype this would enable the signalman to accept a train from the rear box. While the up platform was occupied or a train was being shunted across the cross-over from up to down, etc. The train would be brought to a stand or almost at the outer home signal and then allowed to proceed to the home signal. A driver brought to a stand at a signal and then cleared knows that the next stop signal is at danger. The next signal on the up line is the home signal, which we brought back to protect the up siding connection. I have retained the calling-on arm under the home but unless the platform would be long enough and traffic patterns demanded it, for two trains to be in the platform together it serves no purpose and indeed proves the exception and not the rule. Bracketed from the home signal is a small armed signal for allowing movements on to the down line. It could well be that our imaginary station also serves as a terminal station for some trains and as they return in the down direction they are platformed as such on arrival. Or, if traffic patterns demand, maybe up goods trains



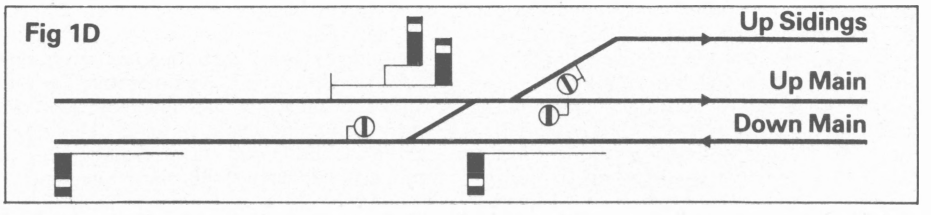
are shunted over and backed straight into the down yard. Much more likely, in the prototype this facing cross-over would be a trailing cross-over or else would be omitted altogether. If this facing cross-over was used purely for shunting moves the small arm could well be replaced by a ground disc as in Fig 1A. The next signal on the up being the up starter, this protects the level crossing and could be placed in such a position that there is no over-run between the signal and level crossing. I must make a point here that is contrary to the centre column of page 558 — stop signals do not have to be placed a safe distance in the rear of the thing they protect. Nor do level crossing gates have to be swung across the roadway before a train can be accepted. A signalman is quite correct to accept and run a train up to a signal protecting a level crossing, even though they are closed and across the railway. The up starter also protects the connection into the siding No 2. Next on the up line we have the advanced starter. This signal controls the entry into the next block section and in modern terms, is now the section signal. A shunt ahead signal is shown under it and would only be provided if for some reason the longest train to be shunted into No 2 siding was of such a length as not to stand between the siding points and the advance starting signal. Obviously as far as possible the advance signal will be sited to accommodate the longest train. Clearing the shunt ahead signal indicates to the driver that he may pass the main signal at danger and the line is clear for shunting purposes as far as the first stop signal worked from the signal box in advance.



On the down line the signalling is similar. Though not shown, a down outer home could well be provided though it should be remembered that even in 4mm scale, 440 yards is about 18ft, so some compromise is called for. The down home protects the trailing cross-over and the level crossing. Next is the 3-arm bracket, the centre arm being the down main starter. To the left is the signal controlling the entrance to the down yard; as it is entered by a facing connection it is reasonable to assume that it will be of a fair size and of some importance. On the right hand doll is the arm controlling the movements across the facing cross-over and directly into the up siding No 1. Should the facing cross-over be turned round to become trailing or removed altogether, obviously this signal would not exist. Likewise, the similar signal on the up main.

The purpose of the ground signal is starting. In up siding No 1 it permits a train along the up main to the up starting signal, or through the facing cross-over along the down main to the ground signal protecting the level crossing. In some cases, two separate signals would be provided. The ground signal on the up main permits a backing move into up siding No 1 only. The other ground signal on the up main permits a backing move into siding No 2, or a move from the up main to the down main up to down starting signals. The ground signal on No 2 up siding permits a train to leave the siding and proceed as far as the advance starter or shunt ahead signal. The ground disc on the down line allows movement over the level crossing and through the trailing cross-over to the up advance signal or shunt ahead signal. Finally the disc in the down yard would permit a train to move along the down main up to the ground disc at the level crossing. The down advance starting signal would permit a train to be drawn down to it waiting acceptance by the signal box in advance. Clearing the points leading into the down yard or the cross-over permits shunting moves to be carried out in the station or a further train run into the down or up yards.

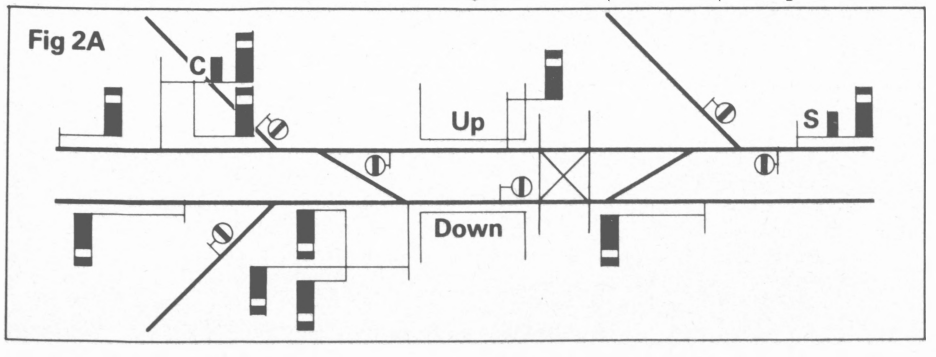
The remarks on the bottom of page 558, third column, I find most quaint. Believe me, in most cases far more effort can be required to pull a ground signal off than a full-size signal, especially when they are detected through several pairs of points.



Also the comments at the top of the centre column, page 560, are not necessarily correct. When two or more signal arms are mounted on the same post, the topmost arm always reads on to the most left hand road. See Fig 3A — as you can see in this case the top arm applies to the last pair of points reached. But it is the most left hand divergence.

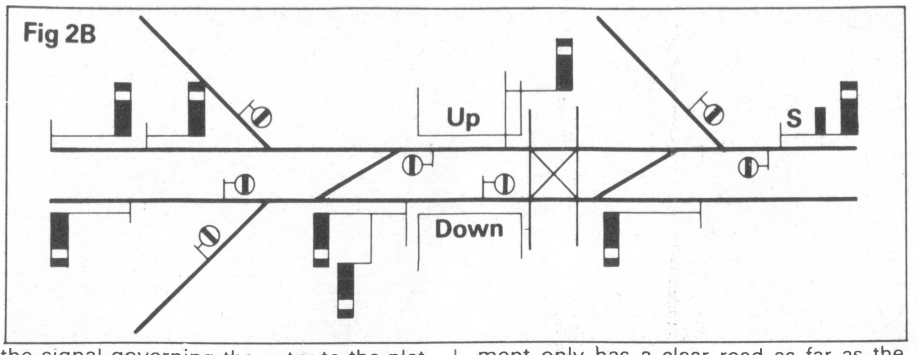
Also stated is a fact that the LNER used the practice a lot of placing more than one ground signal above the other. Well, in my own area it does not appear to be standard practice; nearly all installations having just one ground signal, governing several routes. On the other hand in this area there were several instances of miniature semaphores grouped in the same post.

Diagram Fig 2B shows the signalling arrangement for the same layout as Fig 2A except that the facing cross-over now becomes trailing; this allows exactly the same moves to be made, but simplifies the



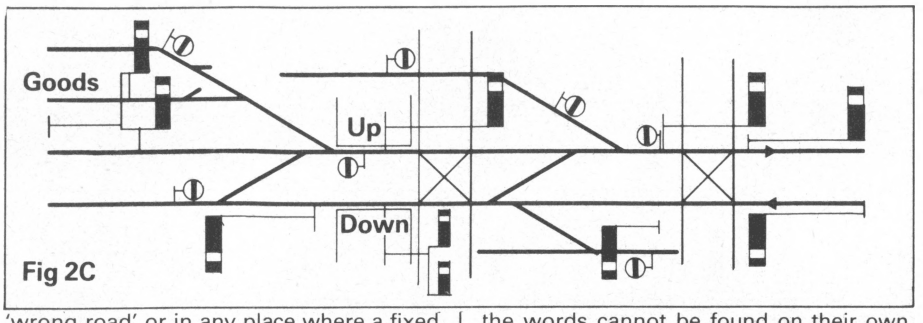
signalling and dispenses with the two facing point locks. On passenger lines all points used in the facing direction must by law be fitted with bolt locks.

Diagram Fig 2C shows a very similar layout but this time on an actual prototype, Beverley in East Yorks which actually still exists to this day. Though somewhat simplified, like our station in Fig 2A/2B, the down platform is bi-directional. At the bracket signal on the down platform the left hand arm reads on to the up main. The right hand arm reads on to the down siding, there being no signal for a train to set back along the down main. This would be a potentially dangerous move anyway. Should for any reason a signalman wish to set a train



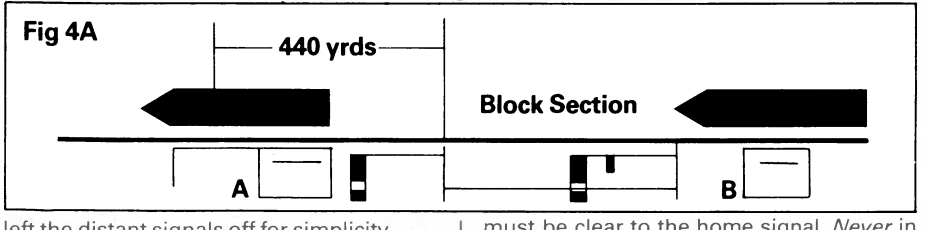
the signal governing the entry to the platform. This is drawn in Fig 2A for the up line.

Subsidiary signals by the very meaning of



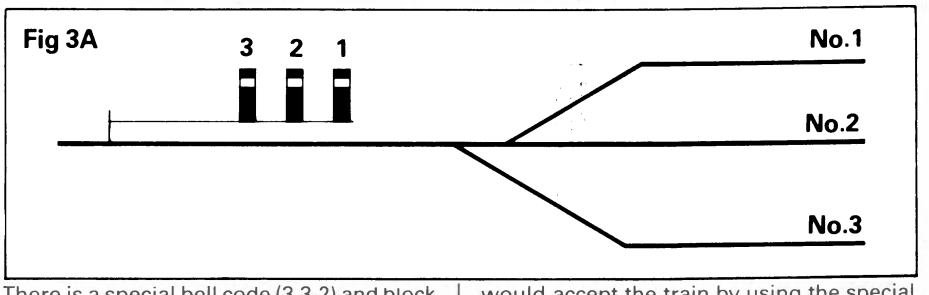
'wrong road' or in any place where a fixed signal is not proved. this would be done by exhibiting a green hand signal to the driver. Before doing this the signalman would first ensure all the points were in the correct position and any necessary rules and regulations carried out.

All the ground signals have exactly the same meaning as in Fig 2A/2B. The only other main difference is the second level crossing. Although marked locally it is electrically released from Beverley signal box. Also all the signals are worked from Beverley. As the up advance starter is sufficiently in advance of the up siding points, there is no shunt ahead signal. The line marked goods is actually a running loop, and in this instance is signalled with a miniature arm though not a subsidiary CW or S pattern. Up to the early 1970s and the decline in goods traffic this relatively simple layout was worked to capacity with trains shunting from up to down, etc. There were then also considerably more passenger trains than today. In all my diagrams I have



left the distant signals off for simplicity.

Unfortunately, Mr Larkin has got a little mixed up with his description of subsidiary signals. The 'C' symbol as he correctly states means 'calling-on'. These are only used on permissive block lines, which means that more than one train can be in a block section at any one time. Passenger trains carrying passengers cannot be run on these lines. The calling-on signal is mounted under the signal controlling the entrance to the forward section. If the forward section is occupied by one or more trains, the next train to enter the section is brought to a stand at the section signal and then the calling-on signal cleared. Certain platform lines are also permissive, to allow a further passenger train into a platform already partly occupied by a passenger train.In this case the calling-on signal would be under the words cannot be found on their own, and must be under a full-size stop signal. The 'S' symbol means shunt ahead and as correctly stated is always found under the 'section' signal and when cleared authorises a driver to pass into the forward section for shunting only. These shunt ahead signals can only be cleared with the permission of the advance section signalman.



There is a special bell code (3.3-2) and block regulation for this purpose. Before the advance section signalman can give permission for ths shunting move, the line must be clear to the home signal. *Never* in the absolute block system is more than one train allowed in a block section, except in the case of an assisting train removing a failed train. Even then elaborate steps are taken to ensure maximum safety.

'W' means warning. Again this subsidiary signal is always below the section signal and would never be used as Diagram 3 on page 559 implies. 'The Warning Arrangement' as is is officially called, can only be used where specially authorised. Basically, a train accepted under the warning arrangement only has a clear road as far as the outermost home signal, of the signal box in advance. It is normal practice before accepting a train to have a further distance of 440 yards in advance of the outermost home signal clear. That is the basis of the Absolute Block system along with a lot more requirements stringently laid down by the Ministry of Transport and in effect for nearly 100 years.

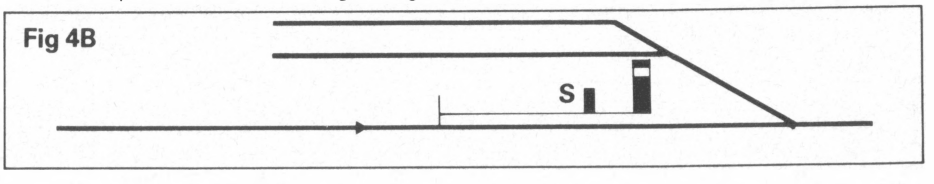
Here Diagram Fig 4A shows a typical example of the Warning Arrangement. Signal box A has a train stopped for some reason and now has not the required clearance of 440 yards in advance of his home signal. As we have seen, without the Warning Arrangement being authorised, signal box A could not accept a further train from signal box B. Now we will presume our mythical piece of line is quite busy, and so to keep things moving and clear the train from signal box B, signal box A is allowed under the Warning Arrangement to accept a further train from B with the block section clear to the home signal only. Signal box A would accept the train by using the special bell signal (3.5.5). The signalman at box B would then bring the train to a stand at the section signal, and clear the subsidiary warning signal.

It is quite incorrect to say that the 'Permissive Block' is also known as the 'Warning Arrangement'. On permissive lines, the Warning Arrangement does not apply.

Also on page 561, it is stated that a 'shunt ahead' signal allows more than one train between signals. This is not correct, though the same statement is correct for 'calling-on' signals. In absolute block, like the block section, only one train is permitted at any one time between fixed signals.

The signalling diagram of a typical junction and goods loop etc, shows among other things the use of miniature arms for goods lines.

Fig 4B shows a situation where the siding connections are in advance of the starter or home signal and no advance signal is provided. In this instance the subsidiary arm is provided for shunting moves. When this



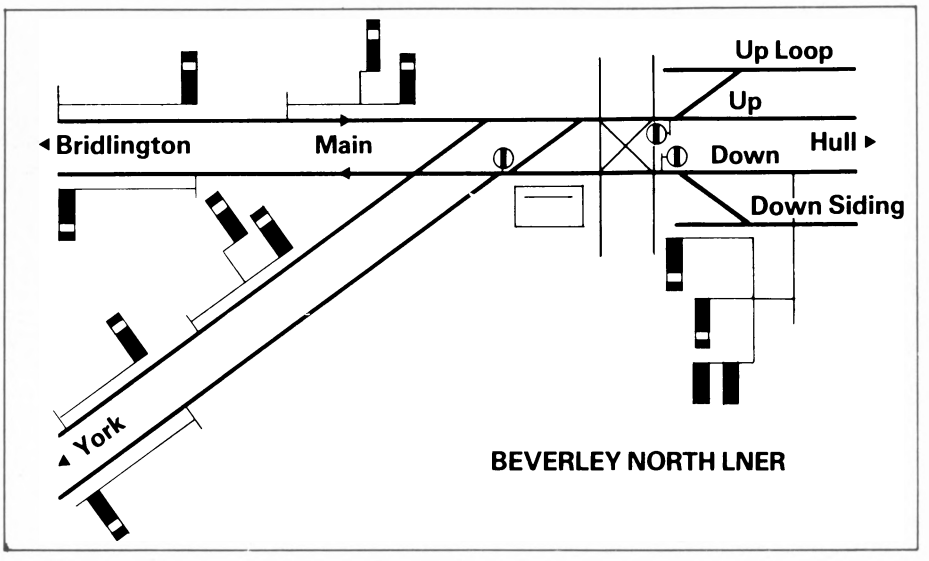
During 1980 Evening Star *was a major attraction at the Great Western Society facility at Didcot. Here an immaculate 92220 runs past the apparatus during a Travelling Post Office demonstration; probably the first time that a 9F has been used to exchange mails (GWS photo)*

arm is cleared it allows an engine or train to pass the main signal at danger for shunting purposes only. It should be made clear that with this pattern of track layout it is not a golden rule to provide a shunt ahead arm. In many cases the main running signal is worked as normal — see the diagram of Beverley Cherry Tree, with the same track arrangement but no shunt ahead signal.

Finally, though I state that it is in theory impossible to have a subsidiary arm mounted on its own, Dave Larkin's photo manages to show one! Having discussed this with signalman colleagues we are all at a loss as to its origin which goes to show what a confusing subject signalling can be!

* * *

Several other letters have been coming in with regard to the part of this series which dealt with shunting signals. It has even been suggested that I should stick to photographing wagons, implying that I do not know what I am talking about! Well I must leave you to make up your own mind on that point. For the record, I have been a signalman for 15 years and have worked the same number of boxes in that time, ranging from a single-line passing loop box with four trains per shift to a South London commuter-area box with sometimes four trains a minute!



Turning to specific criticisms, I did make one serious error in the diagrams. This was to omit the necessary safety checks which *must* be provided when a siding joins a main running line. In sketch 4, I have provided the head-shunt. In sketches 2 and 3, I should have provided the equivalent but fore-shortened safety points known as 'trap points' from sidings 1,2, and the yard sidings 1 and 2 before they join the main running lines.

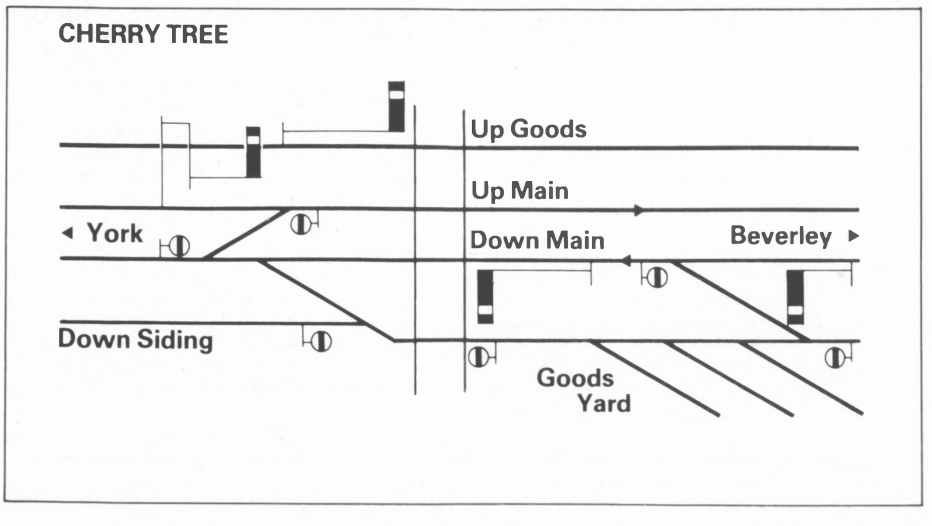
Apart from this, the position in Fig 2 of the up home signal (which, incidentally, is not the 'Up Home Platform') has slipped rather and it should be approximately opposite shunt 1.

All the other criticisms stem from two main facts. Firstly, this series was never intended to be an instruction on how Block Signalling works. In my opinion, few modellers are that interested and, if they are, they will buy a specialist book on the subject, such as the Ian Allan book *British Railway Signalling*. Therefore I have attempted to explain things in terms that have apparently offended signalling enthusiasts. My apologies to these gentlemen but I was not writing with you in mind.

The other problem is that all companies, regions and even areas within regions have different signalling procedures in detail. Nowhere is this more marked than in the signals controlling shunting moves and other such movements. In controlling similar movements, the Southern Railway would provide one ground disc for all movements whereas the London Midland would provide up to five ground discs, if that number of movements could be made from one point.

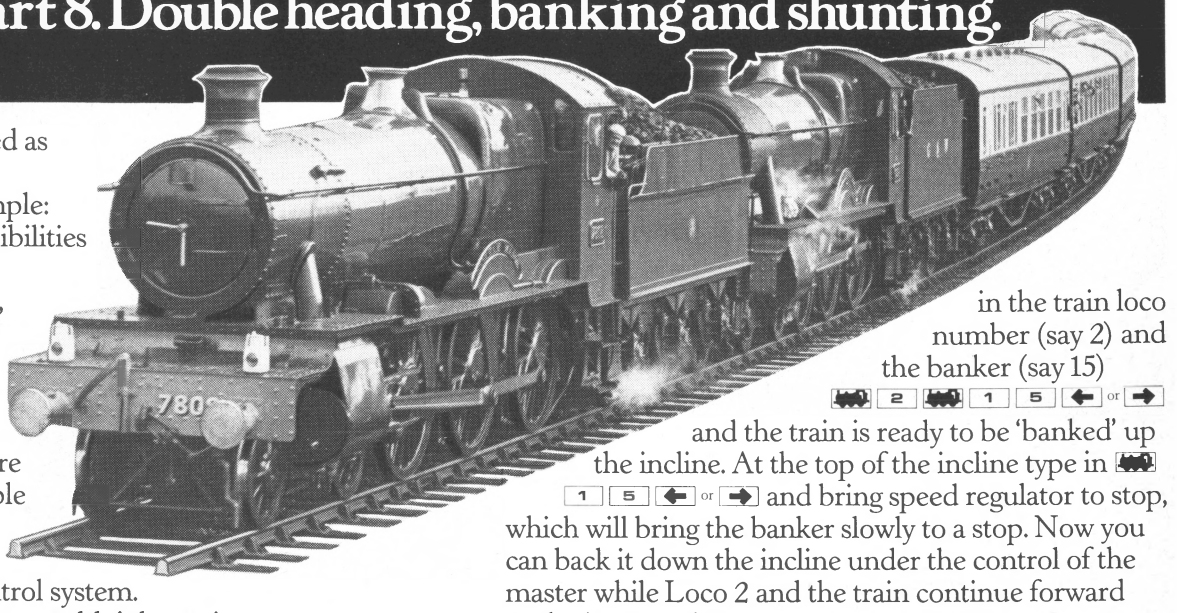
Therefore the working methods that I described in part 3 are those that would apply in my own area and are, in fact methods I have used as a signalman in many cases. If you want to be totally accurate in your own chosen modelling area, I suggest that you go and ask local signalmen.

Dave Larkin



The enthusiast's guide to Zero 1.

Part 8. Double heading, banking and shunting.



As sophisticated as Zero 1 is, its entire purpose is very simple: to expand the possibilities of model railways.

In other words, to make playing with trains more fun.

The three things we cover here are either impossible or extremely complicated with a conventional control system.

With Zero 1 they couldn't be easier.

Double-heading

Heavy goods and long trains sometimes need the extra power of a second loco to pull them. With Zero 1 all you have to do is make sure both locos are facing the same direction. Then type [loco] 1 [loco] 5 [←] or [→]

Both locos will now respond as one, giving you twice the power to pull the train.

Now, to give both locos the same inertia you code the master like this: [INERTIA] 4 [loco] 1 [loco] 5 [←] or [→]

Banking

Steep gradients have always presented a problem in real railways because they often require a second engine to help the train up the hill. This action, known as 'banking' is easily achieved with Zero 1 with a few slight modifications.

The coupling hooks should be removed from the 'banker' loco and the rear of the train. Then plasticard discs, approximately 3/8" diameter, should be fitted to the buffer heads of the banker loco (this will prevent buffer locking).

Bring the train to a stop at the foot of the incline and gently drive the 'banker' up to the rear of it. Type in the train loco number (say 2) and the banker (say 15) [loco] 2 [loco] 1 5 [←] or [→] and the train is ready to be 'banked' up the incline. At the top of the incline type in [loco] 1 5 [←] or [→] and bring speed regulator to stop, which will bring the banker slowly to a stop. Now you can back it down the incline under the control of the master while Loco 2 and the train continue forward under 'memory'.

To regain control of the train type in [loco] 2 [←] or [→]

All this can be done on a master control unit. If you have a slave unit you can allocate control of the 'banker' to it by typing this: [loco] 2 [loco] 1 5 [←] or [→]

Shunting in the terminus

Zero 1 can greatly expand 'play situations' to give you a much more life- like model railway.

Here's an example. Bring an express into the terminus where you have a pilot loco pick up the empty coaching stock and draw it slowly out of the platform. The express train loco slowly follows it out to the starter signal where it waits for a clear road to the shed or stabling point. At the same time the pilot loco continues to the carriage sidings.

With any other system you would need isolating rails, switches and extra wiring to carry out this maneouvre, but with Zero 1 it's all accomplished easily from the master control.

Which is why Zero 1 has become known as "The Ultimate Control System".

ZERO 1

The ultimate control system from Hornby Railways.

TRAINBOOKS

BOOKS FOR THE MODELLER

FROM THE MODEL TRAINS INTERNATIONAL BOOK SERVICE

Callers welcome. Open 9.30 to 5.30 Mon-Fri. We are next door to the Alfa Laval Tower, Great West Road.

Money Back If you are not entirely satisfied with your book(s). You will receive your money back if you return your book(s) within **7 days.**

Prompt Service on all orders.

NEW AND RECOMMENDED

Our new CATALOGUE contains hundreds of railway books from all over the world, plus hundreds of modelling books. Free with orders, or send £1 incl. p&p.

206754 COLLECTOR'S GUIDE TO MODEL RAILWAYS — J. Joyce. This book provides a concise survey for present and potential collectors as well as for those interested in the historical background. 144 pages. Casebound with jacket. **£3.75**

818002 THE COMPLETE BOOK OF MODEL RAILROADING — by David Sutton. Practical guide to railroading lore covers all phases of modelling in detail, from track plans to scenery and type of equipment to use. Over 600 photos. 341 pp, 8½ x 11. **£6.95**

289703 THE COMPLETE HANDBOOK OF MODEL RAILROADING. — Everything you need to know, including planning construction, operation, maintenance, landscaping, electrical/electronic wiring . . . plus a dictionary of railroad terms. Many b/w photos and line drawings. 350 pp. **£4.95**

800010 A CENTURY OF MODEL TRAINS — Allen Levy. A century of Model Trains details all the major developments of commercially produced model and toy trains during the period 1870/1970. The book illustrates the products of such famous names as Bassett-Lowke, Marklin, Bing, Carette, Hornby, Lionel, etc and many lesser-known companies. 208 pp, over 500 illustrations with 187 in full colour. 267 x 330 mm landscape supplied with slipcase. Was £22.50, **only £19.50**

289705 THE COMPLETE HANDBOOK OF MODEL RAILROAD OPERATIONS — Shows you how to operate your own line just like the realistic prototype. Full charts and diagrams. 254 pp P/P. **£4.95**

842003 DIE SCHOENSTEN MAERKLIN ANLAGEN — The Most Beautiful Maerklin layouts. A German language reference by ALBA, showing 30 superb layouts, each photographed, often in detail, with track plans, from 00 to Z gauge. 120 pp, 127 photos, 7 colour photos, 39 track plans, hardback. **£9.95**

874001 THE ENCYCLOPEDIA OF MODEL RAILWAYS — Consultant C. J. Freezer, Editor 'Model Railways' David Jenkinson. Education Officer, National Railway Museum, York. This book is the first practical colour encyclopedia to be published on model railways. It begins with an introduction to the hobby which explains the many choices in gauge, equipment and style of layout. The Encyclopedia describes how to build a model railway, advising on the best use of space and resources. It also features operation and a number of the world's finest layouts. 224 pages; 298 x 216 mm; over 150 colour photographs; 100 colour artworks. **£6.95**

880001 HOW TO GO RAILWAY MODELLING 3rd EDITION — An invaluable book that points the would-be railway modeller in the right direction. Covers starting the hobby in detail, including planning, building, electrical wiring, track laying locomotives, carriages and wagons, scenery and operating. Approx. 216 pp (228 mm x 152 mm), approx. 110 photographs and 100 drawings. Casebound. **£7.95**

206710 LOCOMOTIVES WORTH MODELLING — F. C. Hambleton. First published in 1949, now reprinted. Includes Mr Hambleton's collection of meticulous scale drawings of general arrangements and detail fittings of many famous types. Gives technical data modelling notes, and colour scheme details. An essential volume for all steam locomotives. 216 x 138 mm, 176 pp. **£3.50**

206730 MANUAL OF MODEL STEAM LOCOMOTIVE CONSTRUCTION. — 241 x 152 mm, 172 pp. **£4.75**

206738 MINIATURE LANDSCAPE MODELLING — Classic handbook which is justly famous and essential for all railway modellers. 133 pp. **£2.00**

206764 MINIATURE LOCOMOTIVE CONSTRUCTION — 172 pages. 126 line illus. 16 photo-illus. Linen finish cover. **£2.95**

206726 MINIATURE SCENIC MODELLING — Jack Kine. How to add the realism so necessary to complete the modellers endeavours. The ideas and techniques illustrated have all been tried and tested on TV and are easy to master. 96 pages, card cover. **£2.95**

818004 MODEL AND MINIATURE RAILWAYS — Ed. by Whitehouse & Adams. Authoritative text and over 300 illus. (many full colour) capture the universal fascination of this hobby. Covers origins, types of models, layouts, expert methods, more. 512 pp. 9¼ x 13¼. **£11.95**

206727 MODEL BOILERS AND BOILERMAKING — 185 pp. Paperback. **£2.95**

206761 MODELLING THE ALLCHIN TRACTION ENGINE **£5.25**

206770 MODEL LOCOMOTIVE VALVE GEARS — 98 pages. Paperback. 64 fine drawings. 34 photo-illus. **£1.00**

201701 MODEL RAILROADING HANDBOOK VOL. 01 — Considered to be the 'bible' of model railroading; this 227 page book covers just about everything in a practical way. Covers such things as scratch building locomotives, rolling stock, detailed scenery, plus trackwork, wiring, and creating operational realism. With 237 illus. **£5.25**

201705 THE MODEL RAILROADING HANDBOOK Volume 2 — More about planning, building, operating. Covers HO, N, O, S, TT scale models railroads. Many b/w photos with 19 in full colour. 177 pp. **£5.25**

804002 MODEL RAILWAY BASIC SCENERY — By Michael Andress. Contours. Baseboards. Rocks. Cliffs. Trees. Streams. Lakes, etc, etc. Card covers. **£1.95**

805032 MODEL RAILWAY CONSTRUCTOR ANNUAL 1980 — 128 pp, illustrated text including colour. **£3.25**

880004 PSL MODEL RAILWAY GUIDE 01: Baseboards, Track and Electrification — Sets out the basic principles of sound baseboard construction, accurate tracklaying and correct electrification and wiring. **£2.50**

880005 PSL MODEL RAILWAY GUIDE 02: Layout Planning — Michael Andress. This book gives advice not only on the smaller details of layout design, but also on the more general principles. Heavily illus. **£2.50**

880002 PSL MODEL RAILWAY GUIDE 03: Structure Modelling — Very good handbook showing how to build structures to highest standard with info on kits and materials. 92 illus. **£2.50**

880003 PSL MODEL RAILWAY GUIDE 04: Scenery — Excellent reference book, with 91 detail photos. **£2.50**

804003 MODEL RAILWAY LINESIDE & TRACK DETAILING — By Michael Andress. Signals. Fencing. Huts, Signs. Track. Workman. Noticeboards. Signal Boxes. Point Rodding. Buffers. Point Levers. Ballast and many other aspects are fully covered. **Many black and white photos and line drawings.** Card cover. **£1.95**

206771 MODEL STATIONARY & MARINE STEAM ENGINES — 153 pages. Paperbacks. 60 line drawings. 15 photo illustrations. **£2.50**

201703 MODEL TRAINS — By the Editors of **Consumer Guide.** Over 110 photos and illus., 53 in full colour. Photo-packed survey covers everything from simple sets for children to elaborate systems that fill whole rooms. Incl. getting started, locomotives and cars, power packs and wiring, extensive list of suppliers, more. 8½ x 11. **£1.95**

206772 PAINTING AND LINING RAILWAY MODELS — R. C. Rogers. New edition of an old favourite. Now with pictures and updated revisions. **£1.25**

206857 PLANS HANDBOOKS No. 3. Model Engineering — Locomotives. **60p**

227701 RAILWAY MODELLING: An introduction — This introductory work surveys all the more important aspects of railway modelling today for beginners. It also serves as a valuable reference with facts and figures of value to all modellers, and encourages the development of higher skills to progress from simple inexpensive layouts to ones needing more experience and dedication. 243 x 171 mm. 70 illus. 96 pp. **£4.50**

206762 SIMPLE MODEL LOCOMOTIVE BUILDING — A completely new edition of 'LBSC's' classic book on building a simple 0-4-0 tank locomotive in live steam, 3½ in gauge, 300 pp. **£3.95**

HO '78/79 The International Model Railway Catalogue — A fantastic new book from Germany with text in English, German and French. All pages in colour showing all available HO models to scale. Indispensable for the HO fan. **£14.50**

818006 THE WORLD OF MODEL TRAINS — Ideal for all model railway enthusiasts — a complete history of the subject throughout the world, with authoritative text and a wealth of illustration. Includes all aspects of this fascinating hobby; layouts, complete system operation, construction, more. Over 300 illus., 60 full colour. 192 pp. 9¼ x 12. **£6.95**

804001 00 GAUGE MODEL RAILWAYS — By Michael Andress. The aim of this book is to introduce 00 scale to the beginner and to give him some indication of what is commercially available for the construction of a British prototype model railway layout. 77 b/w photos. 5 line illus. **£1.95**

INTERNATIONAL MODEL RAILWAYS GUIDE (TT; N; Z Gauge) 1980/81 — This is the ultimate reference manual for the modeller, listing, illustrating in colour and describing more than 2500 locos and carriages of more than 50 manufacturers. Complete with details of each manufacturer, their specialties, sources of supply and international representation. **If you have a model railway of these gauges, you simply cannot afford to be without this book.** Large format, 200 pp, over 3000 colour illus. Text in English, German and French. **£9.95**

AMERICAN RAILROADS IN TRANSITION — A photographic essay dealing with the transition from steam to diesel, forming an important contribution to US railroad history literature. 260 large pages, over 200 b/w and colour photos. **£5.95**

Interesting "FINDS" from the recent Frankfurt Book Fair:

ZEUNERT Railway books from Germany — A series of superbly produced all-photo books of great detail and interest to the continental modeller. Books have German text, but over 80% pictures and covering subjects on which there is little or nothing else. Recommended.

890001 DAMPFLOK OF KLEINBAHNGLEISEN (Narrow Gauge Steam Locos) — Type details from B-n2 to C'Cn4v. 94 pp, 90 photos and drawings. **£4.95**

890002 STRASSENBAHNEN AUF ALTEN ANSICHTEN — Trams on Old Photos. German city views A-Z showing trams 1900-1940. 108 pp, over 200 illus. **£4.95**

890003 FAHRZEUGE DEUTSCHER STRASSEN- & STADTBAHNEN Vehicles of German City and Tram Lines) — Showing 2 and 3 axle vehicles from 1945. 152 pp, over 230 photos. **£5.95**

890004 DEUTSCHE KLEIN- und PRIVATBAHNEN (German Narrow Gauge and Private Railways) — Each with route maps and historical/present photos. Best reference Series available.

890004 Vol. 01: Schleswig Holstein/Hamburg. 189 photos. **£13.50**

890005 Vol. 02: Niedersachsen (Lower Saxony). 474 photos. **£13.50**

890006 Vol. 03: North Rhine/Westphalia. 509 photos. **£13.50**

890007 Vol. 04: Hesse/Rhineland/Saar. 340 photos. **£13.50**

890008 Vol. 05: Baden/Wurttemburg. 770 photos. **£13.50**

890009 Vol. 06: Bavaria. 311 photos. **£13.50**

GUIDE TO SWISS PRIVATE RAILWAYS — A complete listing of all private lines in Switzerland, each described with route map, rolling-stock photos etc. **Each £4.95**

890010 Vol. 01: North-East Switzerland.

890011 Vol. 02: South-West.

890012 Vol. 03: South-East.

890013 Vol. 04: North-West.

890014 Vol. 05: Western Central Alps.

890015 Vol. 06: Eastern Central Alps. Each volume has approx. 100 pp and 150 photos.

890016 WISMARER SCHIENENOMNIBUSSE — The Wismar Rail Buses. Describes a unique type of railway, using modified buses, in parts of Lower Saxony and in Spain, from 1930 to the 50's. Excellent reference, with 98 photos (b/w and colour), 28 scale drawings. One of the most interesting railway books. **£9.95**

AMERICA'S COLORFUL RAILROADS — By D. Ball. The first all colour book on the American Railroads system transition from steam to diesel. Stunning photos of the 40 s and 50 s engines. Major lines like Santa Fe, Union Pacific, III. Central-detailed. 10 x 11 in. Hardback. 281 photos. **£8.95**

PORTRAIT OF THE RAILS FROM STEAM TO DIESEL — By D. Ball. This has been our most popular railway photo book for years, and it has just been reprinted. 300 large pages with over 350 photos of American trains and locos. **£8.95**

890017 DEUTSCHE STRASSEN- und STADTBAHNEN (German Trams and City Railways) — A series of area surveys, analyzing each city with details of rolling stock, route map etc.

890017 Vol. 01: Bavaria — 238 pp, 430 photos. **£13.50**

890017 Vol. 02: Northern Baden/Wuerttemberg (Heidelberg, Mannheim, Karlsruhe etc.). 352 pp, 683 photos. **£13.50**

890018 Vol. 03: Southern Baden/Wuerttemberg (Baden-Baden, Stuttgart, Ulm etc.). 280 pp, 552 photos. **£13.50**

890019 BILDBAND DAMPFLOKOMOTIVEN (Steam Loco Album) — A unique photo album showing German steam locos in the 60's and early 70's photographed in use, with actual dates and locations. Locos are shown by type, from 01 to 98. Large format, 120 pp, 119 b/w and 14 colour photos. Highly recommended. **£11.95**

BEYER-GARRATTS — Rhodesia Railways — German language book about this rarely documented subject, with 128 pp, 59 photos, many illus. and drawings, route maps. **£4.95**

SUDAN-ERLEBNIS (Sudan Railways 1945-75) — German language essay on Sudan Railways, with 60 pp, 35 photos and 4 route maps. **£3.25**

SUDAN RAILWAYS CORPORATION 1975/76 — Locos, Narrow Gauge, Time tables, route maps, statistics. German language text, 96 pp, 30 illus. **£4.95**

EISENBAHNERLEBNIS AETHIOPIEN — Ethiopian Railways — Lines, Rolling Stock, route maps, time table. German text, 150 pp, 53 photos, 28 scale drawings. **£4.95**

FELDSPURBAHNEN SUEDWESTAFRIKA (South-West-African NG Railways) — Complete history and survey of these, with 408 pp, 297 photos, 98 scale drawings, maps, 132 loco and rolling stock plans. German text. **£14.95**

DIE TUERKISCHEN EISENBAHNEN (Turkish Railways) — Survey of these and their steam locos, plus info. on German TCDD system and locos supplied to Turkey. 208 pp, 63 photos, 27 tables, data etc. German text. **£5.95**

DIE BAUREIHE E 91 (191) (The E 91 Electric Locos) — Detailed type study of this famous German electric loco, introduced 1925. 64 photos, many scale drawings. Data, type no's. German text. **£4.95**

EVENING STAR — By Martin Evans. As the last steam engine built for British Railways, Evening Star will remain a particular favourite with those who follow the history of steam. Martin Evans presents his reader with all information required to construct an exact scale model of this famous engine. With many diagrams and eye-catching photographs. 224 pp. 240 x 152 mm. Limp cover. **£4.95**

EARLY TIN PLATE MODEL RAILWAYS — By Udo Becher. An absorbing account, which details the highly skilled method of craftsmanship behind some of the earliest model railways. Chapters on classification, identification and dating will prove invaluable to the collector. Photographs, many from the author's own collection, illustrate rare and popular examples of early tin plate models. 180 pp. 295 x 245 mm. £12.50

TYCO MODEL RAILROAD MANUAL — Robert Schleicher. 'Workbench Tips' includes painting, descaling, and weathering techniques for maximum realism. Tips for easy maintenance and trouble-shooting will keep trains running smoothly. Trackwork made simple. Easy-to-build track controls, automatic switching and coupling devices, and wiring mechanisms are discussed in detail. 224 pp. **Only £5.95**

MAIL ORDER

ORDER FORM TO: MT Readers Service, Albion Scott Ltd., Freepost, Brentford, Middx. TW8 0QP, England.

NAME ..... (BLOCK LETTERS PLEASE)

ADDRESS .....

.....

.....

Post Code ..... Tel. No. .....

Credit Card No. .....

☐ Barclaycard ☐ Access (Tick Appropriate Box) MT 1/81

I enclose a cheque/postal order for £

Signature ..... ☐ Catalogue, please

PLEASE SEND ME BOOK(s) .....

.....

.....

.....

To order by mail. Send orders accompanied by remittance. Cheques and postal orders should be made payable to *Albion Scott Ltd.* Postage and packing: UK £1.00 all orders. Overseas: £1.50 all orders (surface mail only).

Overseas customers: Please pay in in pounds (£) sterling by bank draft or international money order. If you send Euro or Dollar cheques add £1.00 for bank charges. Telephone and mail orders accepted on ACCESS, BARCLAYCARD (VISA), MASTER-CHARGE.

BARCLAYCARD VISA

Tel. 01-560 3404 01-560 0595

All Mail Orders and Equiries to: Model Trains Readers Service, Albion Scott Ltd., 51 York Rd., Brentford, Middlesex TW8 0QP.

Trainlines

LETTERS TO THE EDITOR.

Signals

I was interested to read Mr Lines' letter in the October 1980 issue; there were a surprising number of signalling anomalies around the country. Readers might be interested in the Severn and Wye line in Gloucestershire, owned jointly by the GWR and Midland. On this system, you could see Midland signals worked from GWR signal boxes, and vice-versa, and in later years there were MR lower quadrants, LMS upper quadrants, and GWR lower quadrants all worked from the same signal box! This was at Lydney Junction, where the boxes were Midland; further up the line they were GWR structures. The eccentricity of this joint line must be almost unique, but it goes to show that nothing is impossible in the world of railways.

Peter Smith, Uppingham, Leics.

Getting it right

In the August 1980 number of your excellent magazine, I was interested in the article by Richard Gardner entitled 'Making a Hawksworth Castle'. Under the second picture from the top on page 427, it states, and I quote, 'note four-row super-heater'. This sort of statement has also appeared under pictures of Western locomotives in other railway publications.

I should like to point out that in no way can any part of a superheater be seen outside the boiler. The superheater tubes are contained in several large flue tubes whilst the heater is in the smoke-box.

That cover on the smoke-box just above the handrail hides the pipe or pipes conveying oil from the sight-feed lubricator in the driver's cab to the steam pipe in the smoke-box. All the while the engine is steaming, the steam carries the oil into the steam chests and cylinders, keeping them well lubricated.

By keeping the pipes in the lagging under the boiler sheeting, the oil is kept warm on its way to the cylinders and piston valves.

I trust that the above information will be of interest to you and your readers.

J. Pitt, Barry, South Glamorgan.

Yes, we (and other magazines) are guilty of this sort of 'shorthand' caption which saves lengthy explanations, or a few lines, on the assumption that the meaning is understood by most readers. What we really mean is that those locomotives with the four-row superheater have the longer oil pipe cover. I fully agree, however, that this sort of detail should be explained. **Editor.**

'Duchess' colours

In the article 'A Question of Colour' in the July 1980 issue of *Model Trains*, it is stated that LMS No 6230 was finished in Crimson Lake with Black borders lined with yellow.

I was given to understand that the first five non-streamlined 'Duchess' Class Pacifics No 6230 to 6234 inclusive were specially lined out in gold, not yellow, and this is confirmed in D. Jenkinson's book *Locomotive Liveries of the LMS*. It is possible that the gold looked yellow in certain lights, but it would be interesting to have the author's comments.

As regards Class 40, No 40 106, mentioned in another article, I was told on good authority that this engine was repainted blue at Crewe Works but was again repainted green before re-appearing in traffic after its overhaul, the blue livery being carried for about three days only.

Sydney D. Wainwright, Blacon, Chester.

Ian Huntley writes: *Unfortunately the actual colour notes for the non-streamlined 'Duchess' class was on the opposite page to that reproduced, which was simply an interesting page taken at random from my files. The note I made in late 1939 refers to the war as '... bringing about the expanding use of white upon black instead of gold upon crimson in terms of the famous three letters of the company. Lining gold used earlier on some of the new non-streamlined 4-6-2 express passenger locomotives is not likely to be used on the remainder of the class'. This could be a reference to numbers 6230-6234 inclusive. Others in the class probably had lining yellow with crimson.*

South African Railways

I am extremely interested in manufacturing SAR and Rhodesian Railways locomotives (steam types) and possibly rolling stock if there is reasonable demand. This would be a 'cottage industry' approach in an attempt to get some SAR models rolling, as requested by Mr Martin Ward's letter published in the October 1980 issue. I would like to be aware of anyone interested so that I can get an idea of production requirements. SAR and RR (now known as National Railways of Zimbabwe) have some extremely attractive locomotives. Could any interested readers please contact me direct?

Ian Pearson, Sunridge, St Francis Rd, Studley Green, High Wycombe, Bucks HP14 3UZ.

Deltic change

Concerning your article 'Dressing up a Deltic' (October 1980 Issue), you have missed an important feature if the model is to be brought really up-to-date. This is that the small side window of the cab has now been covered over. This can be seen perfectly in the photo of 55009 at the top of page 544.

My brother wanted his Deltic, N-gauge, up-to-date, so I filled in the front side windows and head code boxes with model filler, and then sanded flush. The whole model was then repainted complete with white window surrounds. The model will be renumbered 55015 *Tulyar* when finished.

Steven Clements, Aberystwyth, Dyfed.

Thank you, Mr Clements and others, for pointing out this omission. Despite much Deltic watching in recent times, it is a modification which escaped our eyes! Our model is now corrected. **Editor.**

Exhibitions

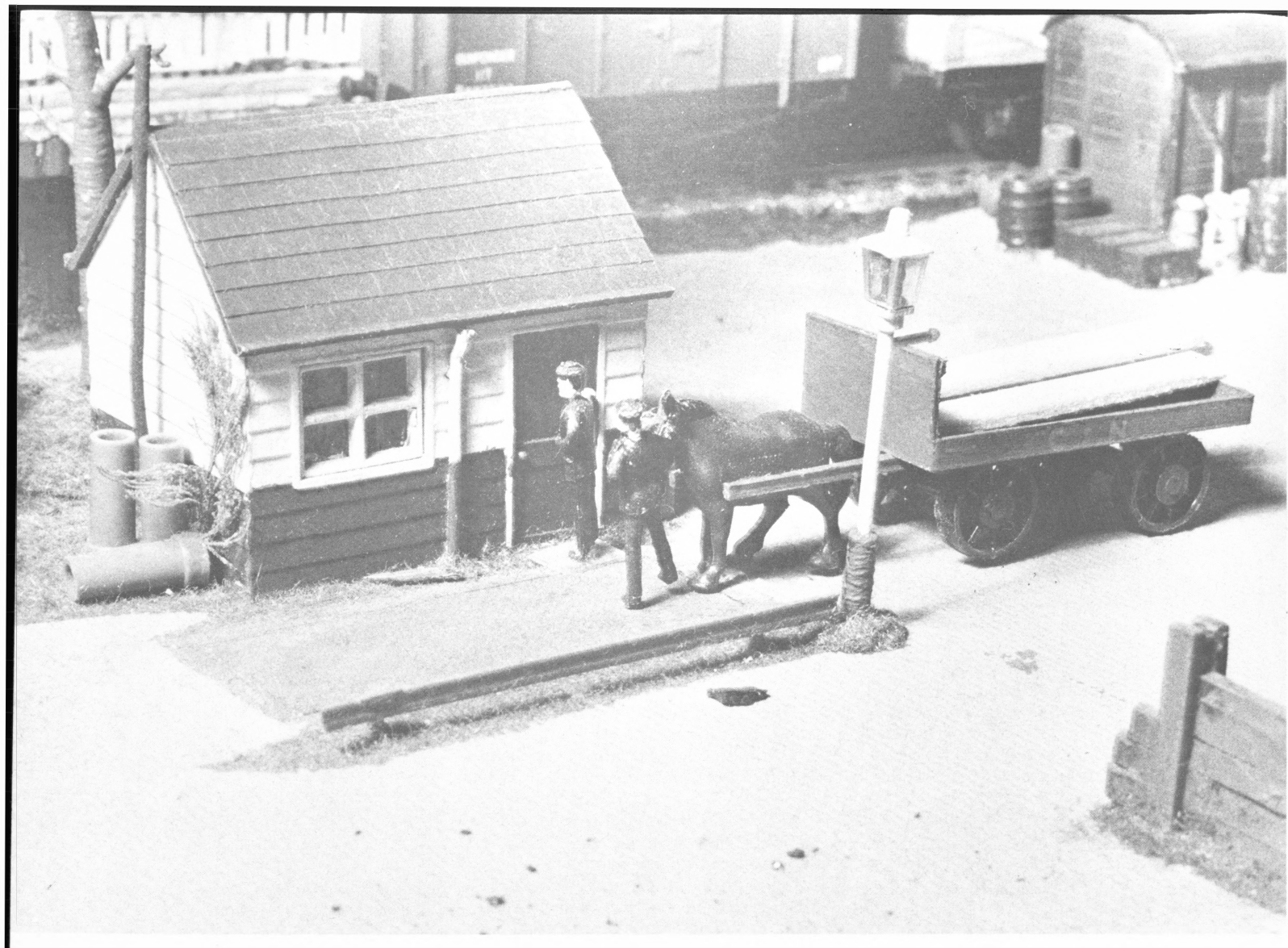
Kent & East Sussex Railway, Weald Area, have an exhibition at King Charles Hall, Warwick Park, Tunbridge Wells, on Saturday, December 13, 1980, from 10.30pm to 6pm. Six layouts and a free film show are among the attractions. Adults 30p, children and OAPs 15p. Ickenham & District SME.

Electric Railway Convention 1981, organised by the Centenary of Electric Railways Committee, will be titled 'Electric Trains into the Eighties'. It will take place on Saturday, January 10, 1981, at the Science Museum, London SW7, from 10.00am to 5pm. Major papers will be presented. Admission to the Convention will be by ticket only, for which a nominal charge of £1 will be made to cover administrative expenses and provision of advance synopses of the papers. Applications for tickets should be sent to Mr S. Williams, 49 Avenue Road, London N14 4DA, enclosing remittance made payable to the Centenary of Electric Railways Committee.

Model Engineer Exhibition opens for the 50th time on January 1, 1981, at the Wembley Conference Centre and runs until January 10, 1981, excluding Sunday. It promises to be the biggest 'ME' yet, and will be officially opened by Lord Gretton.

Great Western Society, at Didcot Railway Centre, promises 'Santa Steamings' on Sundays 14th and 21st December, and Santa Claus will be in attendance to give each child a present. After Christmas, there will be steamings on Sunday, December 28, and New Years Day, Thursday, January 1. Opening times 11am to 4pm each day, with BR services to Didcot providing convenient trains.

Manchester Model Railway Society traditionally stages one of the biggest and best exhibitions of the year. This year's is the 44th and takes place on Friday, December 19 (5pm-9pm), Saturday, December 20 (10am-9pm), and Sunday, December 21 (10am-6pm). Adults 70p, juniors and OAPs 30p. Venue is UMIST Main Building, Sackville Street, off Whitworth Street, Manchester 1.



Weigh-bridge and Weigh-office

Photo of John Flann's model by Brian Monaghan.

An essential feature for any yard, by John Flann — you probably need one on your layout!

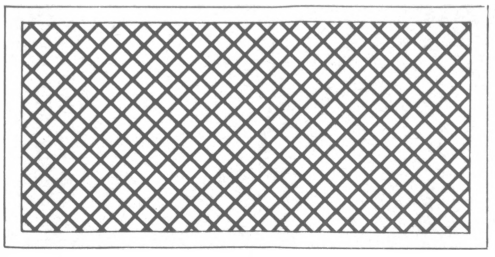
Payment for the carriage of goods by rail was very often calculated and charged on the basis of weight. This meant that the goods had to be weighed. Small consignments could be dealt with on the basis of a large set of scales, but these were impractical where large and bulky materials were transported. Here a larger weighing device had to be used and the weigh-bridge was adopted where the laden vehicles, such as horse-drawn carts and motor lorries, could stand whilst the weight of the load was calculated. This was simply done by deducting, from the gross weight of the vehicle and load, the tare (or unladen) weight of the vehicle. Hence the reason that this always featured (and still does) on the goods vehicles themselves. The weigh-bridge, of course, operates on the same principle as any other set of scales, it is just adapted to accommodate the heavier loads.

Because of all this, weigh-bridges are (or were) a feature to be found, almost without exception, in a railway goods yard. They would also be located where all outgoing traffic could readily pass over them and would thus normally be sited at, or around, the exit of the yard. It thus provides another feature to model so as to provide further authenticity to your layout. Not much work is involved, and the size will, quite obviously, vary with the size of the goods yard and the traffic it might expect to handle.

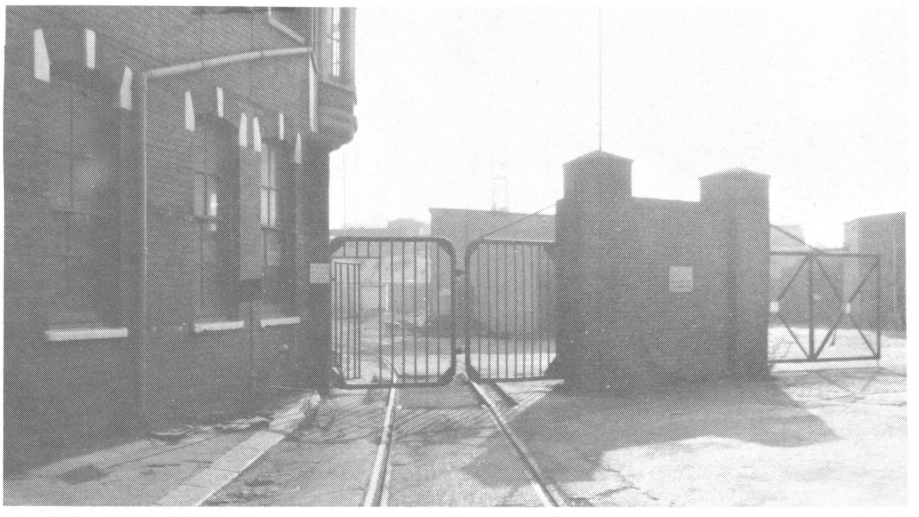
What I have in mind to describe would perhaps be typical of the smaller kinds of country goods yard, where no vast bulk loads were common. Typical would be the coal that the local merchant dealt with, grain, and other materials found grown or manufactured in the locality.

What has to be modelled is the weighing machine itself, together with a small building. This means a representation of the 'table' on which the vehicles would stand to weighed and the hut in which the weigh-beam itself was housed. Here the weights could be read from off the beam or from a dial and where records could be kept of the goods and traders concerned, so that the charges could be calculated and the bill for services ascertained. In its fashion, the weighing machine was, of course, a fairly precise instrument and subject to stringent examination to ensure that it weighed accurately. My recollection is that whilst the weigh-bridges would be within the province of the outdoor Machinery Department, the firm of W.J. Pooley maintained and serviced them and even had special rail vehicles which served these particular requirements. This was in Britain, of course, but all the same remarks (and similar structures) apply to other countries.

In practice, the machine itself was set into a pit in the ground with the top surface of the table at ground level. This was really all that showed. The table was, in effect, a metal plate of about 20ft by 8ft, decorated and finished with an ornate or chequered pattern. The moving, or weighing, part (the table) was set within a surrounding margin. From the table, the weighing machine was connected by beams underground to the actual measuring devices within the nearby cabin, or weigh office, as it was known. Very often this was a brick structure but timber cabins were by no



Above: *Pattern for British style weigh-bridge platform, full-size for OO scale. Photo-copy this page, cut out the pattern and paste to thin card. Then score over pattern and paint.* **Right:** *Not all weigh-offices are huts. At the busy scrapyard of Thos Ward at Silvertown, the weigh-office is also the gatehouse where the private siding enters the yard. There are actually two weigh-bridges. One is for rail wagons and is beneath the closed gates, and wagons are stopped on it for weighing. The other is for vehicles, and the car is parked on it.*



means unusual.

The photograph shows how a weighing machine and office can be modelled. The building is simply the Airfix coal office hut, suitably painted, weathered, and embedded into the ground. The nameboard is omitted from the roof. The weighing table is a piece of card suitably scribed to represent a chequered metal surface (see sketch). The size is about standard, but obviously there would be weigh-bridges of similar and larger capacity. The point is, that it should be able to accommodate road vehicles commonly found in the yard. The other feature that distinguishes the device, is the guard rail alongside its length to protect it from the indiscriminate passage of vehicles over it, for this could damage the mechanism. This can be represented by driving in two rails at either end, and a short distance away and then soldering to it a length of scrap bull-head rail. (Use Epoxy if you can't solder). Bed this guard rail into the yard surface, add a lamp post or two, put a notice on the hut, place some clutter in position — and the little scene is complete. No yard of any sort should be without its weigh-bridge, and this includes private yards or sidings, such as those serving grain elevators or factories. This particular model takes about one evening to make if the Airfix hut is used. Any other suitable hut can be used. Though my model is for OO/HO size, similar structures can be made in other scales.

Bookshelf

NEW BOOKS FOR MODELLERS.

Narrow Gauge Adventure, *by P. D. Hancock. £5.95.* **Rails in the Fells,** *by D. Jenkinson. £6.95. Published by Peco Publications, Beer, Seaton, Devon, and distributed by Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8E1.*

P. D. Hancock is a leading name in narrow gauge modelling, and has been for over 25 years. Indeed he must have done more than most to popularise the idea, and we still have his original article on the subject which appeared in *Model Railway News*, though the subsequent writings were in *Railway Modeller*. This delightful book tells the whole story of his narrow gauge (and standard gauge) modelling with the chronicles of the Craig and Mertonford Light Railway over this period. It is amusingly written, but packs in a lot of inspiring advice and ideas, and a good many modelling tips. This latest edition is brought right up to date and in an age where mass production makes all too many layouts look like all the others, this book should show how a little imagination will go a long way to give a layout character and individuality. David Jenkinson's book is also an updated new edition. The author is well-known for his various layouts based on the Settle and Carlisle line, and the book distils all the important research and background knowledge needed for an authentic layout in this sort of setting.

Roaming the Western Rails, *by George Heiron. Ian Allan Ltd, Terminal House, Shepperton, Middx. £6.95.*

The author is a noted railway photographer whose pictures and paintings have adorned many a book and magazine over the last 30 years or so. This is a collection of his pictures covering the Western Region of BR since nationalisation, and includes everything from GWR steam to HSTs, plus the ex-SR lines which went to WR control in the 1950s. Plenty of pictures deal with subjects other than locomotives – Cardiff booking hall in the 1950s, Midford station, and the Amey Roadstone quarries today are examples of this.

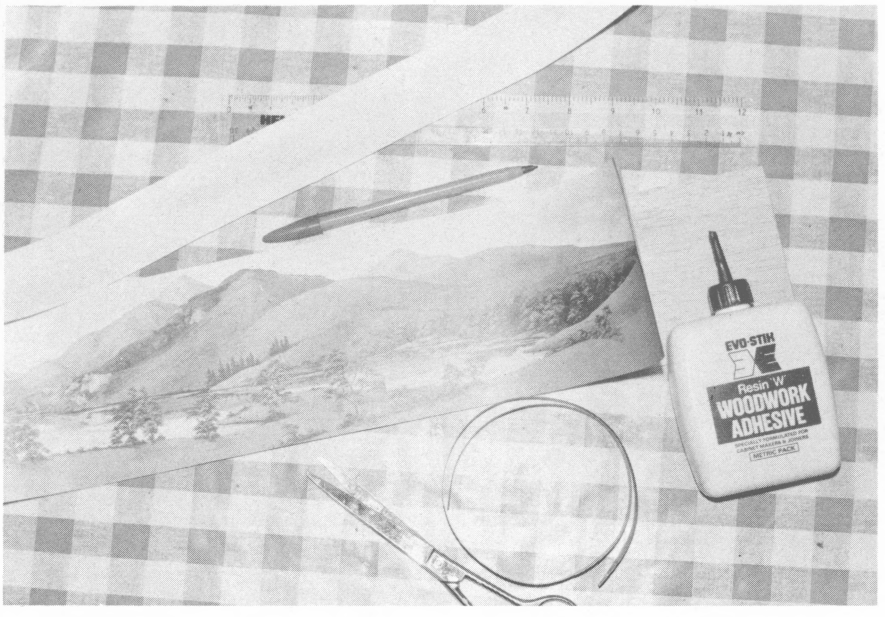
Moguls, Mountains, and Memories. *Boston & Maine Railroad Historical Society Inc, PO Box 2362, Harwood Station, Littleton, Maine 01460, USA, $12.95 (post paid). In UK from Victors, 166 Pentonville Road, London N1. £4.15 (postage extra).*

Scenically New England is a dramatic place featuring all those useful devices we like to use in model layouts – sheer cliffs, rugged mountains, streams and waterfalls, and masses of trees. This book covers the area to good effect, its sub-title being 'A gallery of New England railroading north and west of Boston'. As a visual reference book it is most useful and probably shows more than you would ever see on a visit, for it covers the whole area state by state with pictures dating from around 1937 to the present time. Short lines and the smaller sort of Class 1 railroad abound, so trains are short and tracks are invariably single and heavily graded. Even today steam has not entirely disappeared, and it was more abundant just a few years ago. For the flavour of what might be called 'small time' railroading, this book is hard to beat . . . how about the Belfast & Moosehead Lake Railroad whose passenger train consisted of a small General Electric diesel switcher

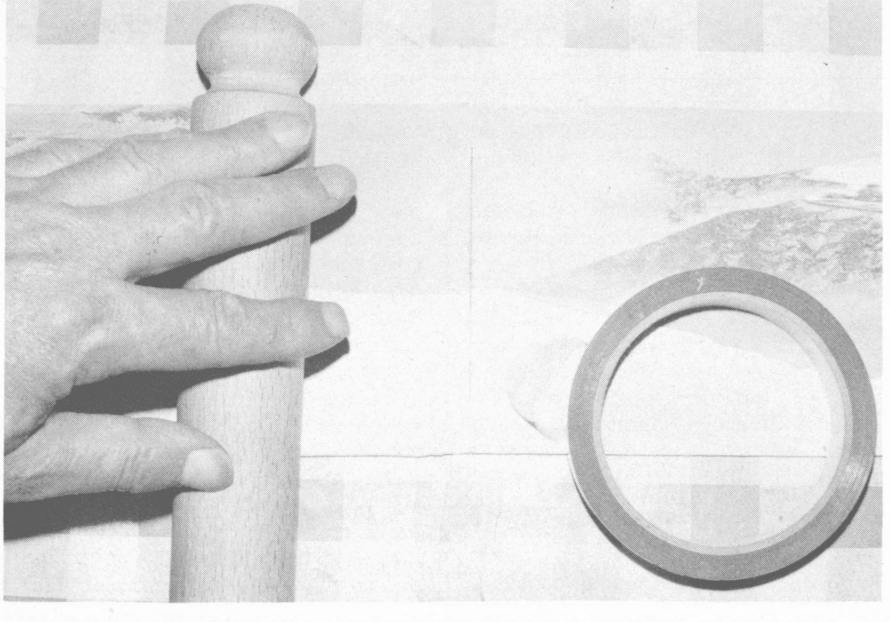
Continued on page 24

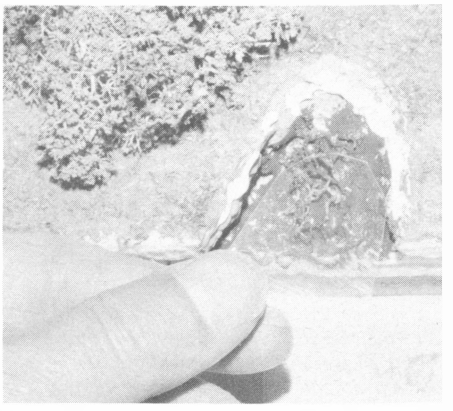
Western Mining Co.

First steps in narrow gauge with a very small but very adaptable layout you can build



For the scenic backgrounds we used well-proven methods. You need a stiff backing and strips of hardboard or plywood will be needed in the larger scales. However, for this H0e (009) layout, balsa wood is strong enough and it's easier to work. You'll need two standard 100mm wide lengths if you do two sides like us. Cut them down to length to fit the board dimensions. For the main background we chose the Peco 'Mountain Lake' sheet which matches well with our terrain. The small size sheet is necessary. As it is deeper than the balsa sheet, mark it for depth and cut off the excess sky and grass area from top and bottom. Then use ordinary PVA woodwork glue to attach the background to the balsa sheet (above). An ordinary rolling pin is ideal for making sure the background sheet sticks perfectly to the balsa with no unsightly air bubbles (below). Note also that we have taped the two balsa sheets together on the back so that we can ensure the contours match exactly at the corner. For the second background we used the medium version of the 'Mountainous Landscape' sheet to give the necessary impression of height behind the tippler.





Above: *How about a pond? We cut away part of the top layer of ceiling tile where it would butt against the background. The resulting depression was painted dark brown/grey and some suitable 'water weeds' (shreds of lichen) were added. The water is a piece of clear plastic cut from stiffener band supplied with new shirts. White glue is used to cement this in place in the depression. We'll add reeds at water level later on. This pond surface must be fitted before the backscene is installed.*

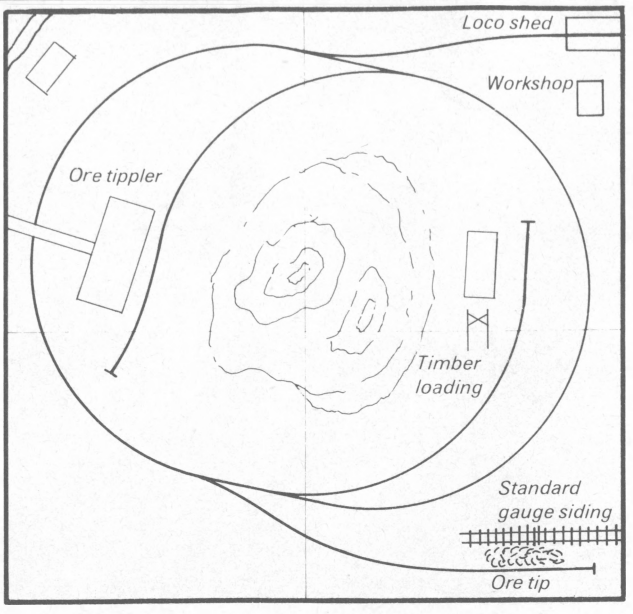
Work proceeds apace to get the Western Mining Co nearer to completion and there is certainly no excuse for idle reflection, even though the layout is small and simple. It is an advantage to get some scenic backgrounds fitted at an earlier stage than usual, partly because we need to fit in 'foreground' items like the ore tippler and the hills which are related visually to the background. But equally important, scenic backgrounds will add an astonishing illusion of spaciousness to this tiny layout and make it look bigger than it really is.

The picture sequence shows how the scenic backgrounds are added. It is quite straightforward, though some thought is obviously needed to make the backscene related to the senery on the board. The Peco background sheets are readily available and though they are commonly used it is easy enough to make some alterations by cutting out overlays from other sheets.

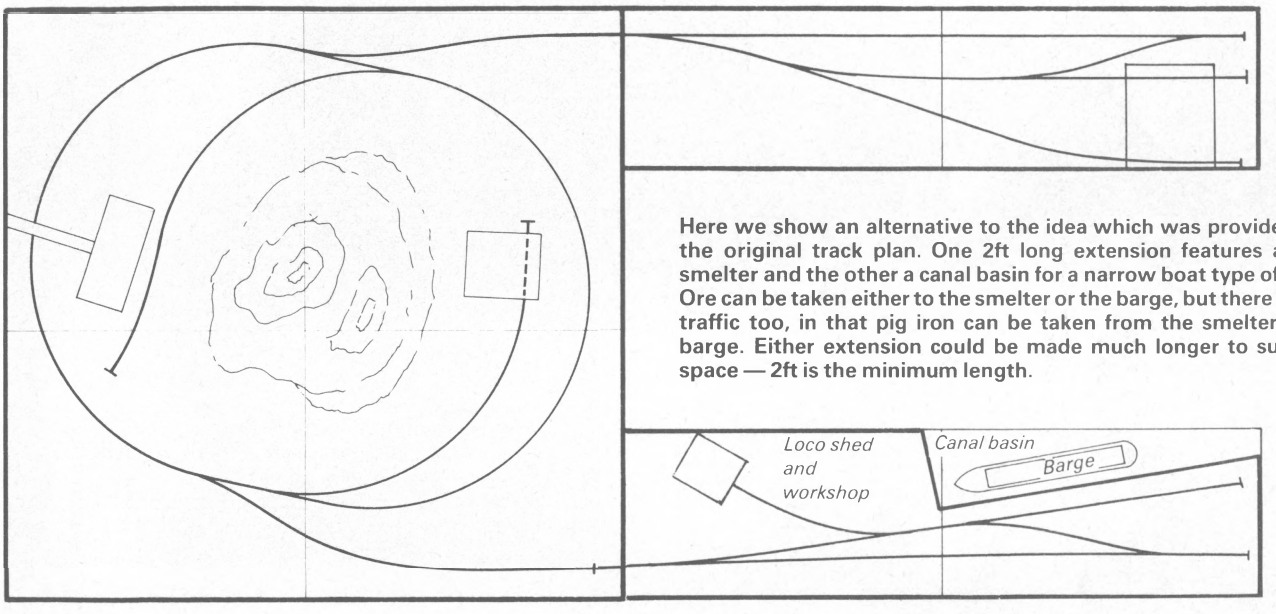
It is necessary to have a backscene along the tippler side of the board because the actual mine is supposed to be 'off stage' in this direction. We then added a covered conveyor which is supposedly carrying the ore from the mine digging to the tippler. We took the easy way out and covered this conveyor, but an attractive alternative would be to make open staging here with Z gauge track and two modified Z gauge open trucks representing an 18 inch gauge track bringing skips from the mine.

Because our baseboard is to minimal dimensions, we put in a dummy retaining wall below the conveyor structure (using stone paper) as there was no room for anything else. However, if you have a board fully 24 inches long then you'll possibly have room to model a proper cliff at this point which would really be better than a retaining wall.

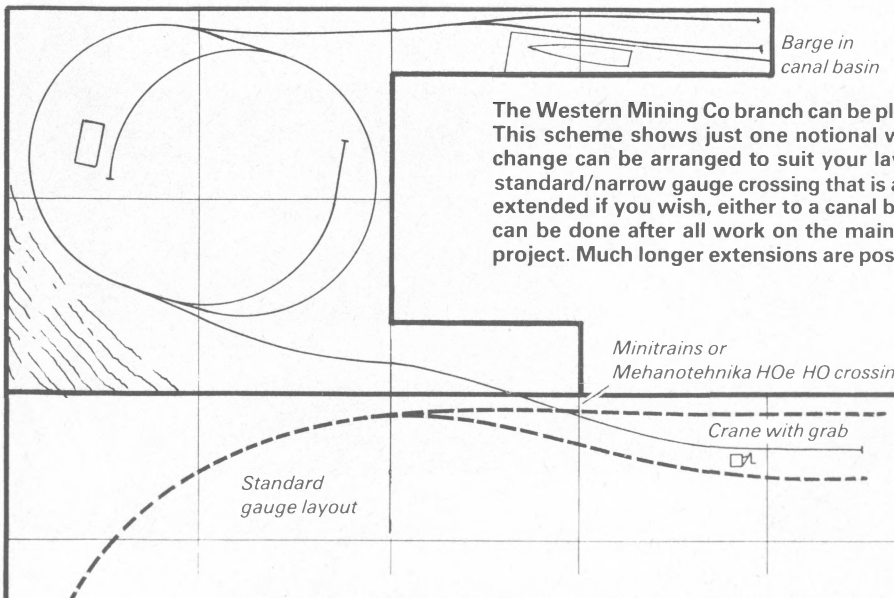
Finally, we show some possible developments and potential for the layout — so don't dismiss this project as kid's stuff. It is actually just as valid as a huge ambitious project; none of the work you put in on this little layout need be wasted.



There are endless ways of developing the Western Mining Co layout and on this page you can see three key suggestions but these don't exhaust the potential. First idea is on the left — an absolutely minimal development for those who are happy with the basic 2ft square board. There is room for a short length of standard gauge track, just long enough to hold two four-wheel hoppers. This can be the interchange siding, basic as it is. No room for anything elaborate — your NG hoppers will just have to dump their ore by the trackside and a diecast front-loader tractor or mobile crane with grab will have to be used to load the standard gauge hoppers. In this case finish the nearer edge with scenic background, providing a dummy tunnel mouth for the standard gauge line. A loco shed or workshop could go in the siding at the opposite corner or a second ore tippler could be sited there.

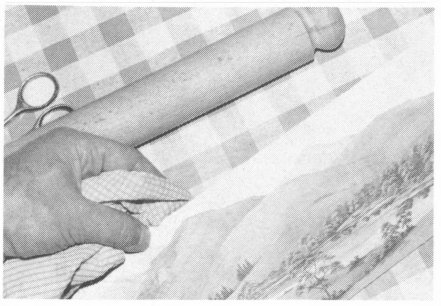


Here we show an alternative to the idea which was provided with the original track plan. One 2ft long extension features a small smelter and the other a canal basin for a narrow boat type of barge. Ore can be taken either to the smelter or the barge, but there is extra traffic too, in that pig iron can be taken from the smelter to the barge. Either extension could be made much longer to suit your space — 2ft is the minimum length.

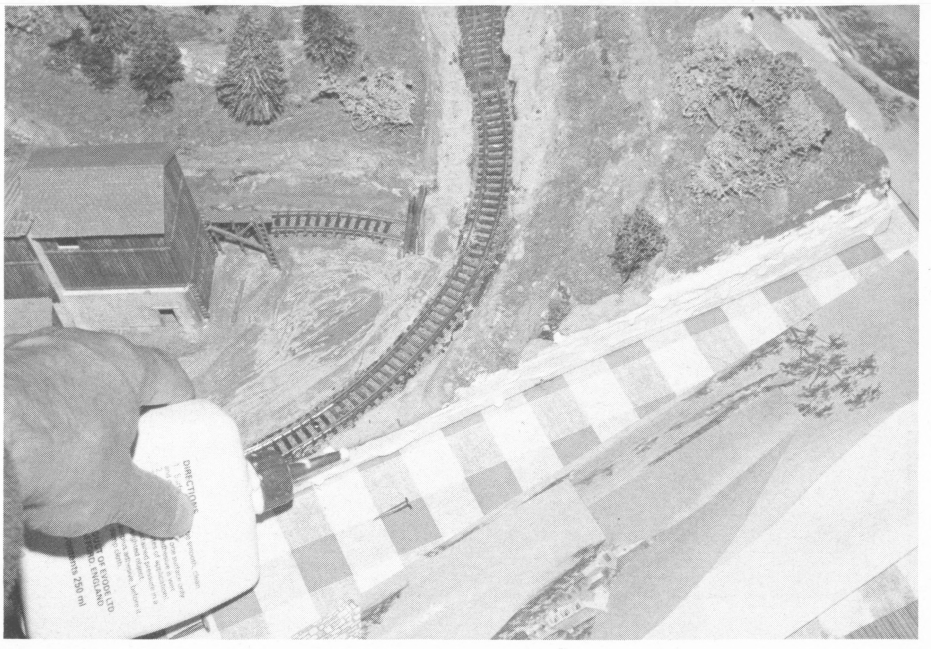


The Western Mining Co branch can be plugged on to any existing layout you may build. This scheme shows just one notional way, adding it to one corner. The actual interchange can be arranged to suit your layout, but here we show use of that delightful standard/narrow gauge crossing that is available in H0 size. The other siding can also be extended if you wish, either to a canal basin or a smelter as desired. These extensions can be done after all work on the main board is complete as a 'Phase 2' or 'Phase 3' project. Much longer extensions are possible, of course, if you have more space.

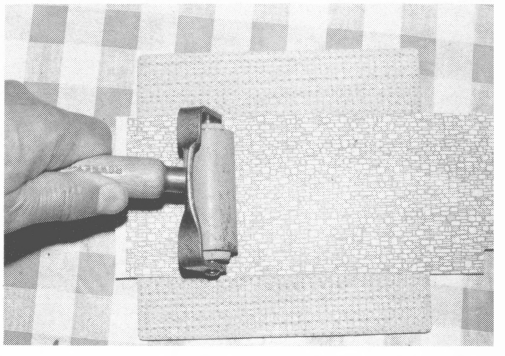
The fourth idea is not illustrated, but it consists merely of making up a second 2ft square board as a mirror image of the first and joining them together to give a 4ft x 2ft layout. Tipplers are arranged on board 1 as originally suggested, but the two inner sidings on board 2 serve a large smelter. A standard gauge interchange siding or a canal jetty can be represented scenically alongside one or both of the tracks which link the ovals at each side.



Above: *After the rolling is finished, use a cloth to wipe away any glue which has oozed out at the edges. Don't let glue smear the front of the backscene. The balsa may well show a tendency to warp at this stage. Whether or not it does, place the boards on a flat surface and rest heavy books on them overnight until the glue is dry. The balsa boards will then stay rigid and unwarped.*
Right: *Use glue along the baseboard edge to affix the backscene. The prominent join line visible on the scenery will be covered by a tree later on.*

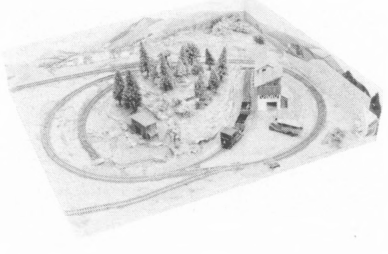


Above: *As soon as the backscene is placed in position, use tacks to reinforce the glue. We used carpet tacks and a hammer because we had a chipboard base. If you use softboard, however, track pins or ordinary small nails will do and they can be pushed in with pliers.*

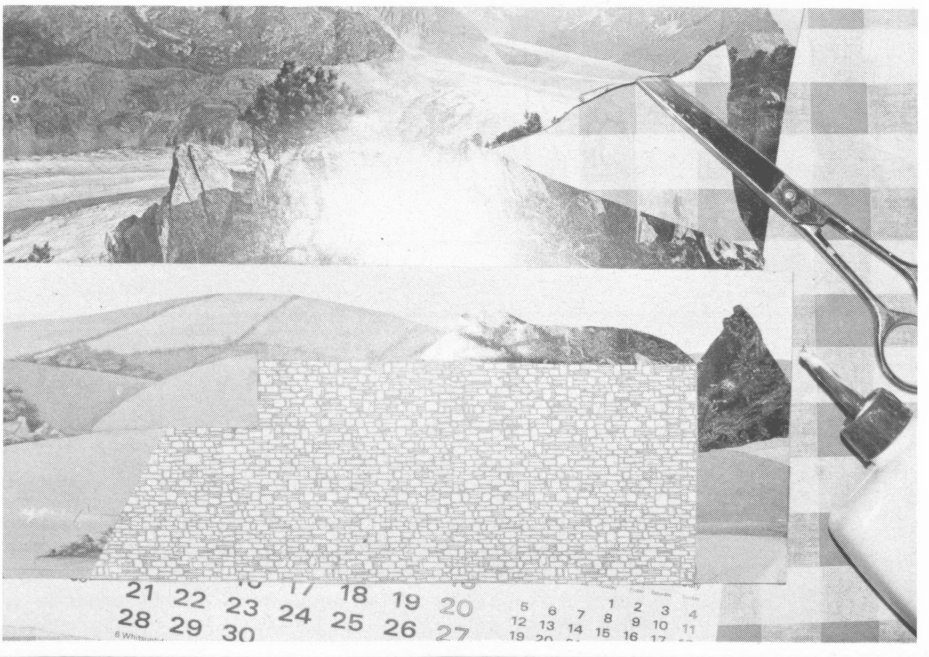


Above: *Here is the printed stone paper which we will glue on the backscene to depict the retaining wall behind the ore tippler. To give it some texture, use a roller (or finger pressure) over coarse sandpaper or a straw table mat (as here). This gives a more realistic effect to the printed paper surface.*

Overall view of the layout at this stage

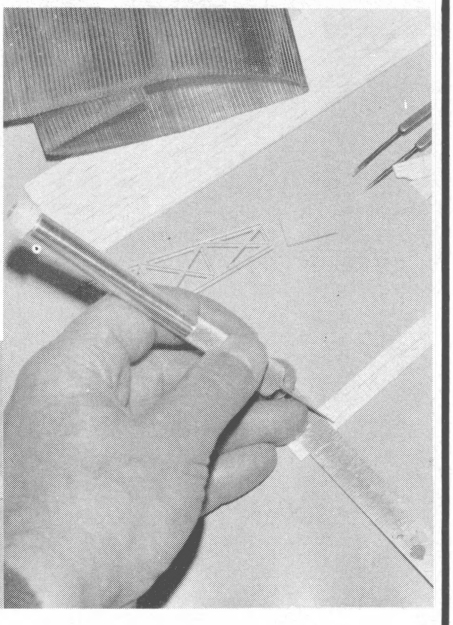


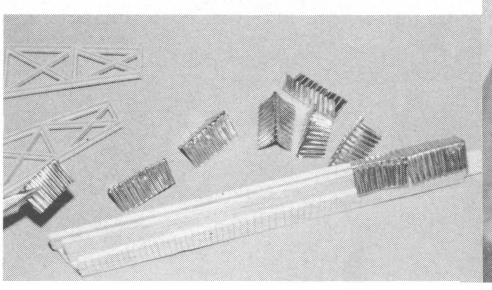
Below: *The retaining wall stuck in place on the backscene behind the tippler. To this we are adding some 'rocks' cut from an old calendar illustration. It looks rather odd at this stage, but later foliage and overlay additions will be done when the conveyor is in position.*



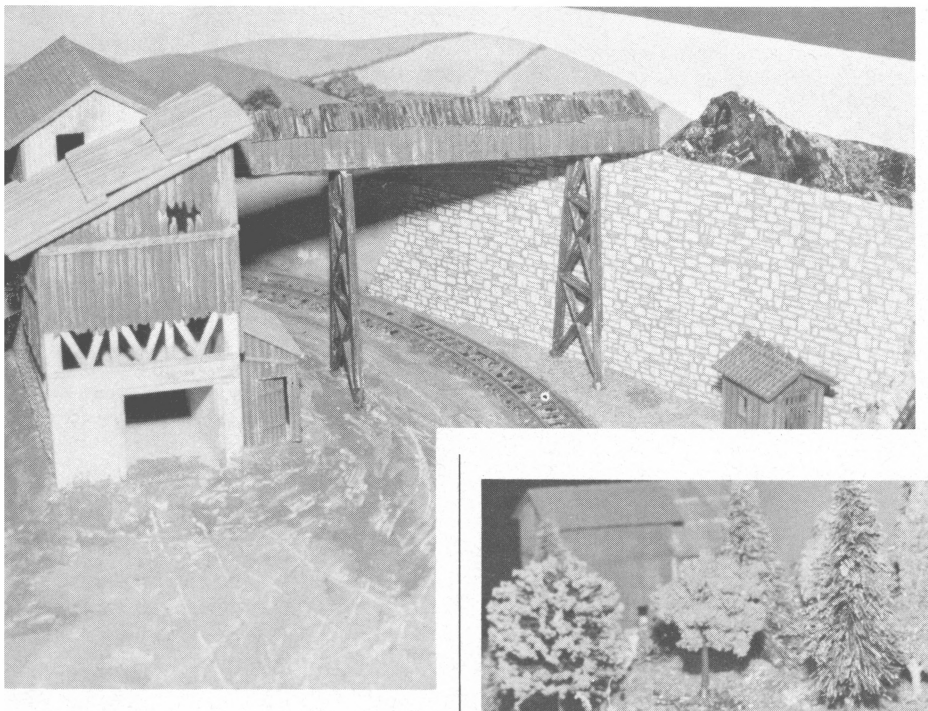
Continued from the November and December 1980 issues

Left: *Here is the baseboard with the two backscene sections in position. Note the careful glueing at the corner to give a neat effect. Use masking tape on the back to hold the corner until the glue dries. Even from this high angle the scenery gives added depth to the layout.*

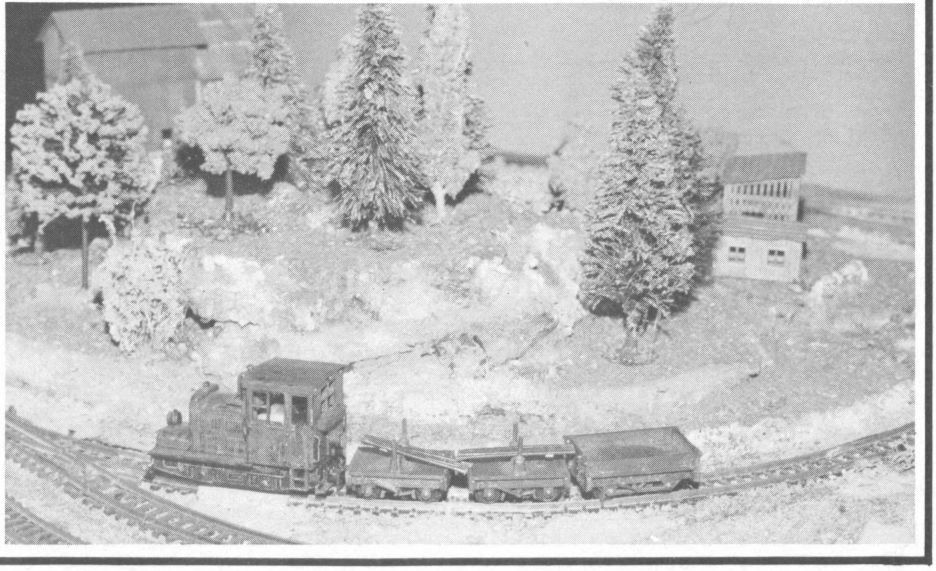




Right: *Making the conveyor. This is a simple scratch-built job using Airfix signal gantry legs cut down to match the height of the tippler opening and the top of the retaining wall. Balsa strips cut to length to span the gap are scored to represent planking and model corrugated iron is cut and folded to depict sloped roof sections. Make dimensions to suit your site and positioning of the tippler.*



Left: *Here is the conveyor, assembled, painted, and glued in place. We used another piece of styrene foam as a cliff face at the corner, added a Faller hut, and a ladder giving access to the cliff top for mine-workers. So there is now a physical connection with the mine. Note the rickety uneven nature of the corrugated iron roof.*



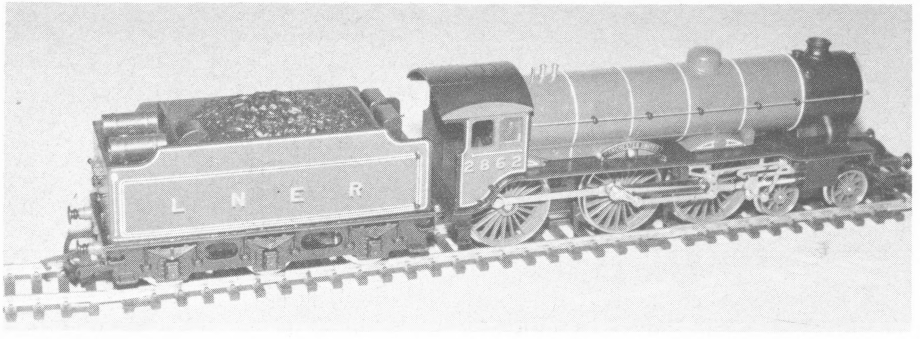
Right: *Here is the first revenue-earning trip from the timber loading spur, though the load looks meagre and unprofitable to us — just a couple of bundles of pit props. The wagons are from the Colin Ashby range. We'll be looking at this area of layout next time and completing the scenic work then.*

TEST TRACK

In this feature we take a closer look at selected items which are tested and assessed by the editorial staff or contributors

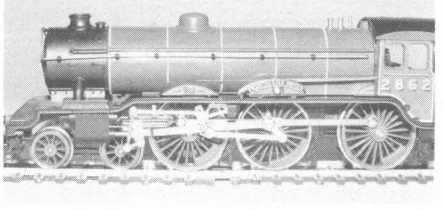
Hornby: 'Sandringham' Class B17, 4-6-0, 1:76 scale/00 gauge, UK £21.50

The idea of combining a compact high stepping express passenger model with famous football team names ought to pay off in commercial terms. Young modellers who had never heard of the B17 class were immediately excited by the *Manchester United* name when they saw our sample. Gresley designed the B17 for the old Great Eastern routes, to replace the B12s



on express passenger work. Having travelled many times behind these engines in the past, it was nice to see the familiar lines again in model form, though Hornby's offering is in the full 1930s period lined out apple green, and not the BR finish which we recall. In addition to the name of the model, Hornby include nameplates and number transfers (complete cab side panels) for *Nottingham Forest, Liverpool,* and *Arsenal.* As B17s had various tenders, we assume that Hornby checked these names as appropriate to the nice 4,200 gallon standard tender they supply – our limited references didn't yield the information. The nameplates are very well done, giving an effective 'brass' look even though only printed self-adhesive paper. All dimensions check out against published data except that the driving wheels are 2 scale inches under size by our measurement – hardly worth worrying about. All detail is finely done, the cab is fully fitted, and the powered tender is a splendid model in its own right, looking very 'busy' with air reservoirs up on the tank top. Overall finish is exemplary, worthy of showcase display – only the buffer beam number is missing. The only visual blemish is that the cylinders are too short, barely lining up with the steam pipes. This is to allow bogie swing. If your curves permit, it would be worth rebuilding the cylinders to correct length. Front footplate steps are missing as usual and some plastic card under the front end would eliminate daylight, though on this model it is much less of a problem than with previous Hornby models.

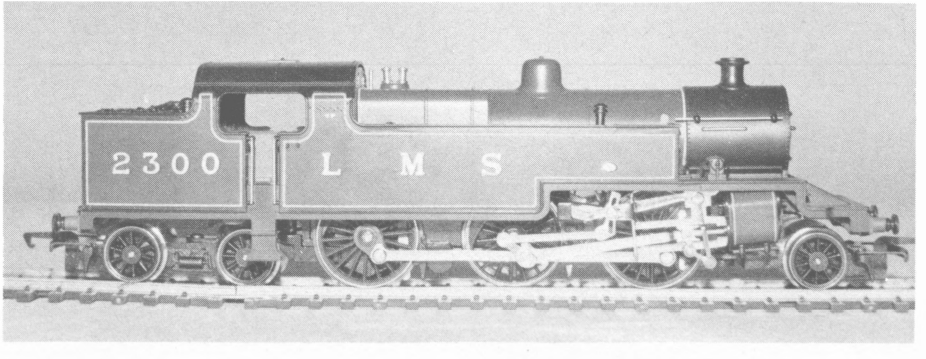
On the track performance is up to the usual high standard of Hornby models with powered tenders. The model didn't run quite as smoothly and slowly as the 'Patriot' but should do so after some running in. We couldn't achieve the same very slow crawl that the 2300 class demonstrated to us, but on overall performance and sure-footedness the model is excellent. Being short the front overhung on curves is less offensive than usual while the tender coupling gap is as close as can be for negotiating train set track, yet it looks almost scale distance and can't be far out. On the track the model looks right, and with a train of teak coaches in tow, it makes a handsome sight. For a compact layout it would be a better buy than a Pacific for top link work. As a sign of the times, both this and the 2300 class model are fitted for installation of Zero-One modules (not supplied) and an instruction sheet showing how it's done is provided.



Hornby: 2300 Class 4P 2-6-4T, 1:76 scale/00 gauge, UK £18.95

Despite the troubled economic times, Hornby have stuck well to their promised release schedule and their new model of the Fowler 4P 2-6-4T depicts the pioneer machine, No 2300, in the '1928 style' LMS livery carried by the first batch produced (some 'Crabs' had this livery too), these being among the few secondary engines to appear in LMS red before black became universal for all bar express passenger types. No 2300 was, in fact, the first engine to have the new style livery when it was completed in December 1927. Hornby have done a first rate job with what can fairly be called an exhibition finish on the model. Though 'LMS red' means different things to different people, we reckon this to be as good a likeness as any, and it certainly seems to us to be a good model for demonstrating this style of LMS painting, lettering and lining. The very smooth clean finish is most pleasing and we could find only two minute dust particles caught under the paint on the right side of our model, the rest being literally eggshell finish. All main dimensions check out exactly with published data. Compared to photos the sandboxes are fractionally narrow, but this is done to clear the wheel flanges and is not noticeable. The prominent sand pipes curving down from the boxes are depicted by stumps. They are clearly not practical on a mass produced model, but it would be easy enough to add them from soft wire or stretched sprue if you were to drill locating holes in the sandboxes. Missing also are the front footplate steps, as is usual, to allow the bogie to swing. The valve gear is well done, but the cylinders are too small, though not too noticeably so. In general, chassis detail is well done and all wheels are scale diameter. All body detail is there, and backhead detail in the cab is superb, even though it is hardly visible. There is the usual problem with too much daylight visible under the ends, due to the need to allow for bogie swing. The gap can be filled with black plastic card as suggested with our recent 'Patriot' conversion article. Even so 'in the flesh' the model is nothing like as bad in this respect as it seemed from recent Hornby adverts which didn't really do justice to a good looking model.

On the track the model ran superbly right down to a slow crawl. Indeed it ran well at the same low controller setting as we managed to achieve with Athearn's Baldwin S-12, tested at the same time, and this and the S-12 were the best runners of



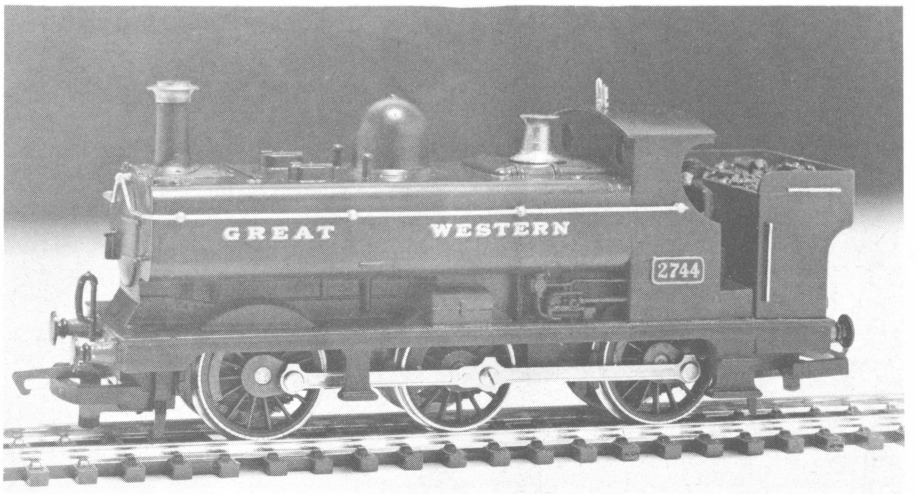
the four locos tested this month. What we didn't like, however, because it irritated, was a very noticeable oscillation which the loco had when in motion at 'normal' running speed. The bogies appeared to be 'hunting' rather wildly. Close examination and running the model upside-down on the bench, revealed that the leading driving wheels, which take the motor drive, were either badly quartered or very loosely set in the frames (we suspect the former) and they ran anything but true, so causing the swing which showed up on the track. We think this was probably a fault in our sample and not a general design fault. Even like this, however, the model turned in a fine running performance. It won't worry everyone, and indeed wasn't so noticeable with a train in tow, but if it concerns you, make sure the dealer gives you a test run in the shop. We think 99% of models won't show any wobble, but it is something for the discriminating customer to check.

The model is suitable for the early 1930s period and we hope Hornby will do it in LMS and BR black, too, to suit other periods of its career. In sum, a very nice model of the original.

Hornby: GWR 2721 Class 0-6-0PT, 1:76 scale/OO gauge, UK £14.35

Hornby have offered quite a few 'basic' 0-6-0 models over the years, starting with the 'Jinty' back in Rovex days. Very often these fairly simple models have been simplified or distorted to fit the chassis, but here we have a very good attempt to come up with a model to please the more discerning enthusiast, and it is based on the latest style of Hornby chassis which takes the drive to the leading axle, so leaving an open uncluttered cab. Hornby take advantage of this here, of course, by modelling the delightful open-cab version of the old Dean standard Pannier, giving full backhead and bunker detail. Though a driver and fireman come with the model, you'll need to replace the driver with a standing figure to take advantage of the open cab feature – the Hornby driver is seated, more appropriate for modern engines. Wire handrails are provided round the tank, and we found a touch of epoxy useful at the cab end as the handrail tends to work loose and slide out of the knob if you are not careful. Bunker handrails are moulded in, but well done, and the moulded detail is done with great refinement over the entire model – scale size rivets rather than the exaggerated representations often found on models. There is a brightly plated safety valve cover which needs a mould line rubbing down, then a coat of green paint. The overall finish is excellent, the pre-1934 style lettering and plain unlined green, making it appropriate for the inter-war period though some of these survived to BR days, and the old lettering style was sometimes still seen in 1947 or later. Missing are buffer beam numbers and small marks like power coding.

Performance is very reasonable without being outstanding. We could achieve a quite acceptable slow crawl even with a



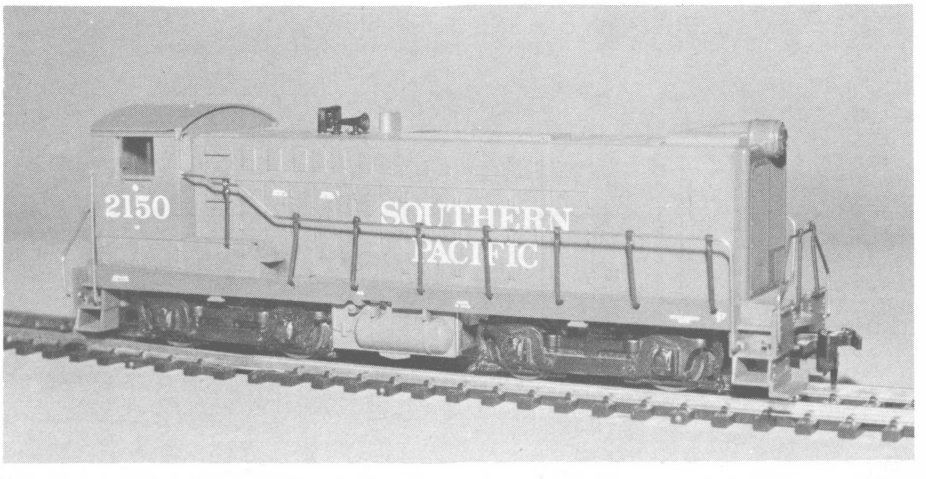
normal 'train set' controller, though the gearing is on the high side as we found when we compared it with some models of comparable type from other makers, using the same control setting – they crawled even slower! Over dead frog pointwork the model generally performed satisfactorily (using Airfix and Peco turn-outs) though at the very slowest speed we could achieve there was stalling on the frog.

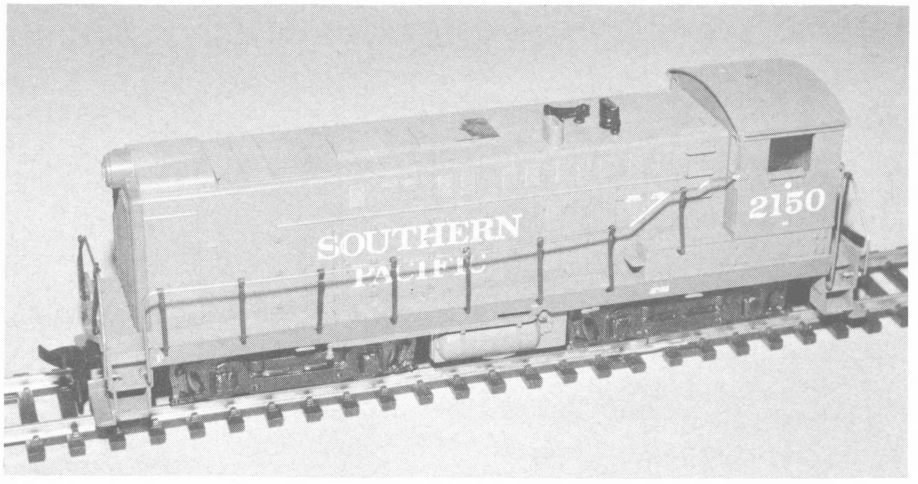
Checking dimensions proved more difficult, mainly because we had no drawing of this particular locomotive sub-type. However, we are left with a suspicion that the body stands about 2mm too high on the chassis. Chassis, wheel, and overall dimensions are as close to published data as makes no difference – mostly spot-on, in fact. However, against the 5700 which replaced it, and drawings of the original saddle tank version and other closely related types, the bunker and roof line comes too high. Comparing the model with pictures shows that while the buffer beam depth is correct, the model buffers are lined to the bottom of the beam while on the prototype they are set centrally. Thus, while the body is dimensionally correct it appears to be perched up a little. We can't be too dogmatic about this because there were so many rebuilds and sub-variants in this class. It is not really very noticeable and can't be said to detract from the overall charming appearance – and it won't stop us adding this very pleasing little model to our GWR collection; every sleepy GWR branch line needs one!

As a footnote, the model as supplied has no room for a Zero-1 module and the makers suggest a van permanently coupled to carry it. This is restrictive (though a shunters truck or brake van in a marshalling yard would be acceptable). It looks to us as though one solution might be for the modeller to remove the coal and the bunker front, then convert to a closed cab version with a little plastic card. This *should* then give room for a module in the cab.

Athearn: Baldwin S-12, 1:87 scale/HO gauge, UK £10.80

Baldwin were the big name in steam, but they were big in diesels, too, until they went out of business (beaten by other diesel builders like Alco and EMD) in 1956. The last type in production was the standard Baldwin 1200hp switcher design, the S-12, about 450 of which were built in the 1951-56 period. The S-8 (800hp) and DS-4-4-10 (1000hp) were alternative models with similar bodies but different engine ratings. The S-12 and its brethren were chiefly remarkable for being unremarkable, but the name and the honest workaday styling (and performance) of the original has ensured a nostalgic affection for what is now a 'vintage' type. Many of the survivors went second-hand to short lines or industries where they still work in diminishing numbers. Athearn's model has been available for a few years now but has only just reached us. It is proclaimed 'ready to run' but comes with a pack of loose hand-





rails, lights, and small fittings to add – all easy enough to do in less than an evening though care is needed in securing the handrails. Subject to availability it comes in SP (our sample), ATSF, B&O, and plain unpainted finish for decoration by the purchaser. Finish and moulding quality is impeccable.

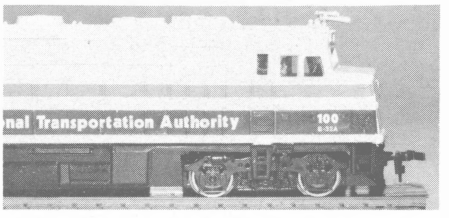
On the track the model performs in remarkable fashion, aided by Athearn's legendary flywheel motor and nice low gearing. It will just whisper along at a barely perceptible crawl, fully responsive to any control setting, this despite the fact that the wheels are sintered iron (as in old Triang models) rather than the smart nickel silver types we are used to these days. Being just 6 inches long, it gets easily into tight corners so it is a great space saver for small layouts. Also, as we found, it gets round sharp curves without derailing its stock due to excess coupler displacement, despite the fact that the couplers are mounted on the chassis and not on the bogies. Longer locos with rigidly mounted couplers often cause derails on curves. With couplers on the body, full pilot board detail is possible. On the model overall, only screen wipers, coupler pin handles and brake pipes need to be added for full detail, though there was much detail variation between users.

The impressive performance coupled with modest price makes this very worthy of consideration if you are in the market for a small dependable American diesel. Our sample came from Victors who import the Athearn line.

Bachmann: EMD F-40PH, 1:87 scale/HO gauge, UK £7.95

Bachmann do a good service bringing us this very up-to-the-minute model for the compact and functional F-40PH will probably be an important type of the 1980s. Derived from the successful GP-40 line, the F-40PH shares some of the same mechanical and running parts, though the body style is of the angular 'cowl' type for passenger service. This model appeared in 1976 and is still being built and delivered. It was developed as a replacement for the old EMD F units which have been used over the past 20 years for push-pull and similar commuter traffic, mostly with bi-level passenger cars (see article on CNW Scoots, April 1980). With bi-level cars, electric power was used for air-conditioning and heating instead of the traditional steam generator (boiler). The old F units were converted for the job with auxiliary electric generators replacing the original boilers. In the F-40PH, this all comes as part of the design. Currently these locomotives are fast replacing F units as the standard commuter train loco.

Major user is Chicago's Regional Transportation Authority and our sample depicts one of these machines in the handsome blue/red/maroon/black finish of the RTA. Each loco is named for one of the Chicagoland suburbs or villages served by a commuter train. Both the model and the finish are extremely accurate in every respect, even to the quite glossy paintwork which these very new locos have. Detail includes screen wipers, brake pipes, and cables – we can't find anything missing. Currently F-40PHs are being ordered by the transit authorities of other conurbations, so more colourful liveries will be seen in future. The only snag for modellers is that there are no HO models (or even kits) to be had of the Budd or Pullman-Standard bi-level cars which these locos push-pull. A complete train could be only two cars long. Maybe Bachmann will remedy this deficiency by producing matching bi-levels for the locomotive?



Better news is that Amtrak also ordered F-40PHs for long distance work as a quick substitute for the SDP-40F, a standard 'cowl' unit which suffered some serious derailments and had to be withdrawn. Bachmann therefore offer the model in Amtrak finish, but they also do modern Amfleet coaches. The loco in Amtrak colours with, say, three Amfleet coaches will give an authentic scale length Amtrak train of minimum type – though they are often longer. Bachmann also do the Santa Fe livery for this model – handsome but bogus, as ATSF is not in the passenger business any more.

The model runs well, though with only one bogie powered. Hauling power is not spectacular but it is quite adequate for the loads of, say, 2-6 cars this type of loco is required to pull. This is a very good model at a bargain price. Our sample came from the Bachmann importers, Victors of Pentonville Road, who hold stocks.

MODEL TRAINS Bookshop

How to order: make cheques payable to Modellers Bookshop. Payments in sterling only please. Orders should be sent to MODEL TRAINS, 4 Surbiton Hall Close, Kingston, Surrey. All prices include post and packing. Money back if not entirely satisfied with any purchase.

NEW BOOKS

LOCOMOTIVES I HAVE KNOWN BY J N MASKELYNE. Perhaps not so much new as at long last published. Originally published in 1959 this is a combined facsimile edition of the author's two famous works 'Locomotives I have Known' and 'A Further Selection of Locomotives I have Known'. In this edition the order of both books has been changed so that it is now arranged roughly in ascending order of size. The contents contain sections on 98 steam locomotives complete with a line drawing of each engine, technical descriptions and some notes based mostly on personal recollections and observations. £13.50.

STEAM '80. A must for enthusiasts ever since its first publication in 1968. It sets out to list every steam locomotive in the British Isles and report the previous years activities, so providing an accurate reflection of the current steam preservation scheme. Complete with numerous black and white photographs this is a very useful handbook to railway preservation and minor railways in the British Isles. £4.25.

OUT OF PRINT TITLES

We have very limited stocks of the following two books which are now out of print. These are available on a first come first served basis. If your order is unsuccessful we will let you know.

AN INTRODUCTION TO MODEL RAILWAYS BY P HORNSEY. Published by NEL in 1977 this is a richly illustrated book, which as the title says is very much an introduction to the hobby rather than a step by step guide to making a model railway. It will, however, provide the newcomer with some sound general advice and plenty of ideas. 156 pages of full colour illustrations. £6.50.

MODEL AND MINIATURE RAILWAYS BY P R WHITEHOUSE AND J ADAMS. Published in 1976 by Hamlyn/NEL this is again a lavishly illustrated book but it provides a far more comprehensive text aimed at the collector and the modeller. Index, 500 pages mostly with full colour photographs. £15.00

STEAM PAST SERIES

A useful series for those interested in reading about various aspects of the steam era. The texts are illustrated by numerous black and white photographs many of them previously unpublished.

THE LIMITED BY OS NOCK. The story of the Cornish Riviera Express Ltd, known to generations of Great Western men simply as the 'Limited' and some of the reasons why it had such a special place in so many peoples hearts. £4.45.

THE BIRTH OF BRITISH RAIL BY M R BONAVIA. The events, the men, the appearance and the atmoshphere of the British railway system during the period 1948 to 1953 by someone who was personally involved. £4.45.

PRESERVED STEAM IN BRITAIN BY P B WHITEHOUSE. A panorama of British steam preservation by an acknowledged expert in the field. The text sets out to convey something of the unique character of each major railway. £5.45.

GRAVEYARD OF STEAM BY B HANDLEY. This book is written around a collection of photographs rather than the photographs illustrating the text as in most of the series. There are many good detailed shots in this collection taken at Woodham Brothers' railway dismantling yard at Barry Island. £4.45.

MEN OF THE GREAT WESTERN BY P GRAFTON. Former Great Western employees recount their experiences on the footplates, in the sheds, and in the signal boxes of the Great Western. £4.75.

STEAM'S INDIAN SUMMER BY G HEIRON AND E TREACY. A collection of photographs by two well known railway photographers capturing the end of the the steam era. £4.45.

TRAVELLING BY TRAIN IN THE EDWARDIAN AGE BY P UNWIN. A recollection of the sights, sounds, smells and feel of train travel in the Edwardian period, it is in many ways a fascinating book about the period as much as the railways. £4.95.

GENERAL INTEREST

NORTH AMERICAN RAILWAYS BY J B HOLLINGSWORTH AND P B WHITEHOUSE. Well illustrated history of the North American railway system including the Burlington Great Northern, Union Pacific, Penn Central, Canadian National and Canadian Pacific Railroads. Photographs of the first steam engines, camel-backs, narrow-gauge railroads, name trains, electrified railways, turbines, diesels, subways, metrolines and turbines. Index, 50 colour and 200 black and white photographs, maps. £7.95.

THE WONDERFUL WORLD OF STEAM LOCOMOTIVES BY P B WHITEHOUSE. A collection of colour photographs from around the world of steam engines, some no longer exist, others are still in service. Everything from main line locomotives to rural narrow-gauge miniatures are featured. 100 colour photographs. £3.95.

THE GOLDEN YEARS OF TRAINS 1830-1920. A well illustrated account of the development of railways in Britain, France, Germany, Italy and America. £3.95.

THE GREAT STEAM TREK BY C P LEWIS AND A A JORGENSON. A beautifully illustrated book showing South African steam locomotives in action. The photographs illustrate 85 different classes of locomotives. Glossary, Index, 319 photographs in colour and black and white. £8.95.

STEAM LOCOMOTIVES OF BRITISH RAILWAYS BY A C CASSERLEY. An extremely useful reference book recording all the locomotives acquired on nationalisation of the railways and those built subsequently for British Railways until construction of steam engines ceased in 1960. Every class of locomotive is illustrated and information is given on the history and origin of all classes. Mention is also made of those machine engines saved from the scrap heap. 710 black and white photographs. £4.95.

PICTORIAL ENCYCLOPEDIA OF RAILWAYS BY H ELLIS. Over 800 photographs and 30,000 words covering the history of the railway. Contents include early steam, Victorian steam, railway buildings, carriage design, steam locos of 20 century, tracks, bridges, viaducts, electric, mountain railways, City railways, diesels, signals and telegraphs. Index, 43 colour and 800 black and white illustrations. £4.25.

COLLECTORS GUIDE TO MODEL RAILWAYS BY J JOYCE. A concise survey of the subject for present and potential collectors. 156 black and white illustrations. £4.75.

THE MODEL RAILWAY NEWS VOL I. A bound facsimile edition of the first twelve issues of 'Model Railway News' which were first published in 1925. It not only provides a fascinating look at the early development of miniature railway modelling but also offers a wealth of valuable reference material which is still of use today. £7.25.

BRITISH LOCOMOTIVES 1894 BY C J BOWEN COOKE. A fascimile reprint of a classic work on the subject of steam traction from the Rainhill Trials to the end of the Victorian era. Illustrated with numerous black and white photographs and line drawings. £8.25.

PRIVATE-OWNER WAGONS BY P MATTHEWS. A collection of photographs, line drawings, and history. A very useful reference book for any modeller interested in this subject. 35 black and white photographs, 60 line drawings. £1.00

GENERAL MODELLING

PAINTING AND LINING RAILWAY MODELS BY R C ROGERS. An introductory book explaining the various methods and techniques available to the modeller for painting and lining models. 16 line drawings and seven black and white photographs. £1.65.

MINIATURE SCENIC MODELLING BY J KINE. A practical and entertainingly written book by an expert on the subject. Covers all the basic techniques and subjects such as the baseboard, landscapes, trees, painting, rocks, water and buildings. 30 black and white photographs, 39 line drawings. £3.25.

MINIATURE LANDSCAPE MODELLING BY J H AHERN. A popular book on the subject for many years it provides a good basic introduction to the subject and was written with the railway modeller particularly in mind. 33 black and white photographs with 46 line drawings. £3.00.

MINIATURE BUILDING CONSTRUCTION BY J H AHERN. A companion volume to the author's book 'Miniature Landscape Modelling'. It is probably still the most comprehensive book available on the subject. 25 black and white photographs and 77 line drawings. £2.75.

MINIATURE LOCOMOTIVE CONSTRUCTION BY J H AHERN. The third and final volume in the author's series on railway modelling. This book has been considered a standard for many years and although some of the references are now out of date the basic theory stays the same and it remains an invaluable reference book for someone looking for an introduction to the subject. 16 black and white photographs, 121 line drawings. £0.45.

LOCOMOTIVES WORTH MODELLING BY F C HAMBLETON. A very useful reference book complete with authentic drawings and technical data. All the locomotives chosen are from the pre-grouping era. 300 line drawings. £4.00.

MODEL LOCOMOTIVE CONSTRUCTION BY M EVANS. A clearly written and comprehensive book on the construction of electrically driven model locomotives for gauges 0 and 1. The book starts with a review of full size locomotives and explains the pros and cons of modelling the different classes and progresses stage by stage through the whole process of construction and finishing. 36 black and white photographs and 65 line drawings. £3.45.

NARROW GAUGE RAILWAY MODELLING BY D A BOREHAM. A revised edition of this very useful and popular book on the subject. The book while being very practical is certainly not written in a dry style and covers comprehensively laying the track and building the rolling stock and locomotives. 32 black and white photographs, 63 line drawings. £6.00.

SIMPLE ELECTRONICS FOR MODELLERS BY I R SINCLAIR. A detailed explanation of basic electronics as it effects the modeller's. Covers tools, equipment and theory and is a useful book for someone wanting simple theory and techniques clearly explained. £3.35.

TECHNICAL MODELLING

MANUAL OF MODEL STEAM LOCOMOTIVE CONSTRUCTION BY M EVANS. A revised and enlarged edition of this standard reference book. A practical and informative book for those building locomotives of any gauge between 2½ inch and 10¼ inch. A comprehensive coverage of each part of the locomotive backed up by drawings and photographs. £5.25.

MODEL LOCOMOTIVE BOILERS BY M EVANS. A comprehensive and well illustrated manual on the design and construction of a locomotive boiler. £3.75.

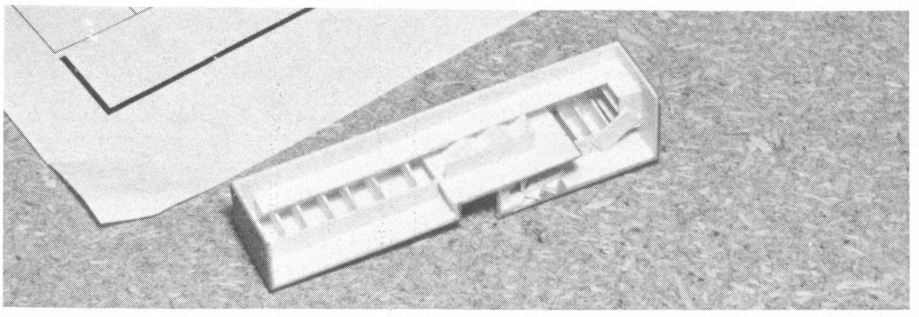
MODEL BOILERS AND BOILERMAKING BY K N HARRIS. A slightly more detailed approach than 'Model Locomotive Boilers' and perhaps better suited to someone who already has some experience of boilermaking and is looking for ways to improve. Well illustrated with photographs and line drawings. £3.95.

LBSC'S SHOP SHED AND ROAD BY M EVANS. A revised edition of this well known book of valuable hints and tips for the model engineer. Illustrated with photographs and line drawings. £4.75.

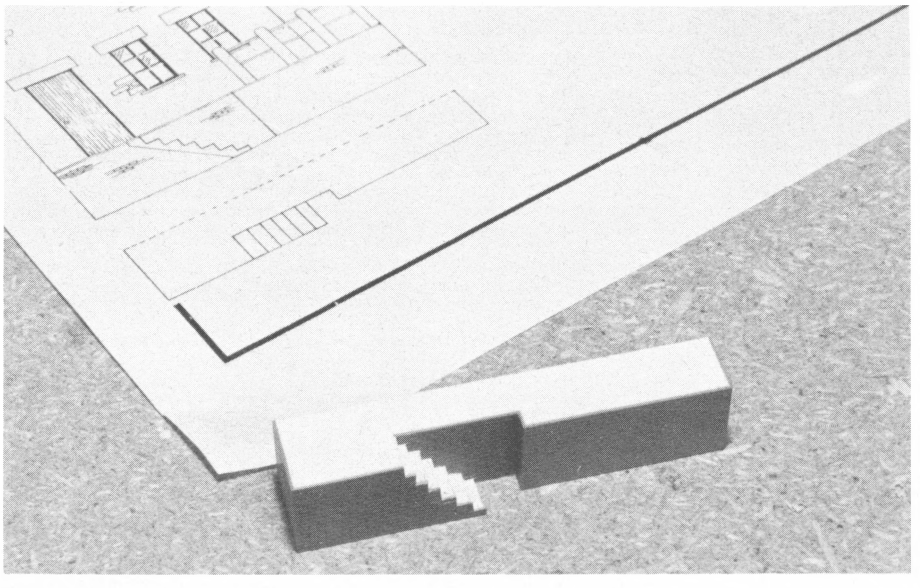
SPEEDY G W 0-6-0 TANK ENGINE 5 IN. GAUGE BY LBSC. An informative handbook for any model engineer planning to build this popular engine. £2.10.

More than an Oval

Ralph Laughton continues the detailed work on the scratch-built plastic goods shed project started in the September 1980 issue.

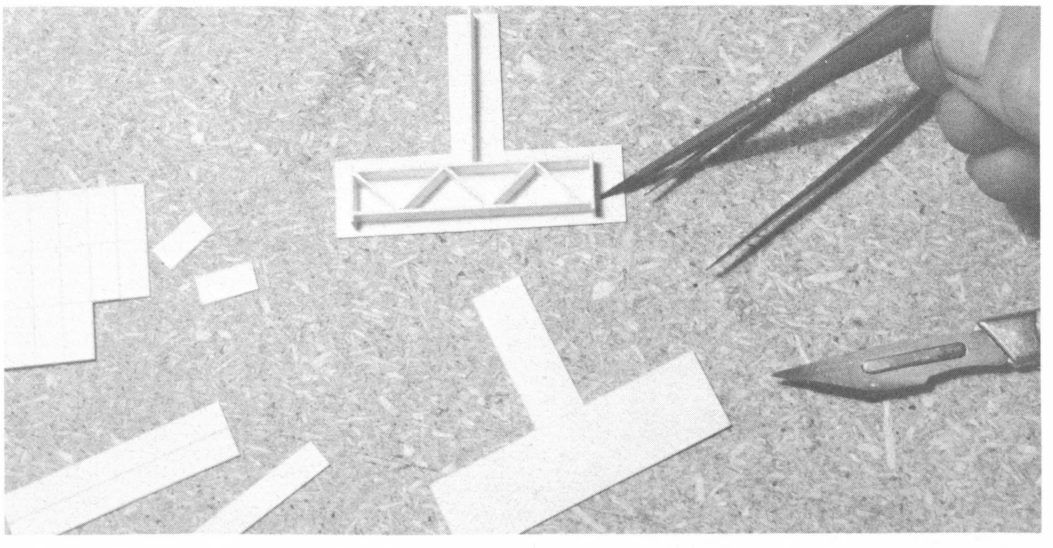


The steps were built from 20 thou plastic card as a separate unit. All the measurements were taken from the plan in the September 1980 issue. I photo-copied mine in order to save the magazine from getting dirty (this service is available at very reasonable cost from good stationers). Nothing is wasted in this type of construction; all the offcuts are used as bracing as can be seen in this underside view of the steps.

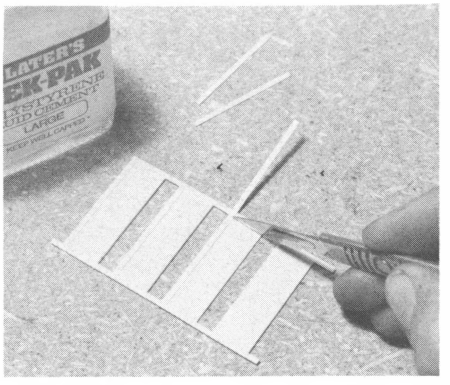


The step treads were fabricated from 10 thou plastic strip cut over-size. These were stuck in place and put to one side. When dry the excess plastic was trimmed off flush with the face of the wall. Brick embossed plastic card was added to the faces to finish it off. Make sure that the brick courses match up around the corners this helps to make the joints less obvious.

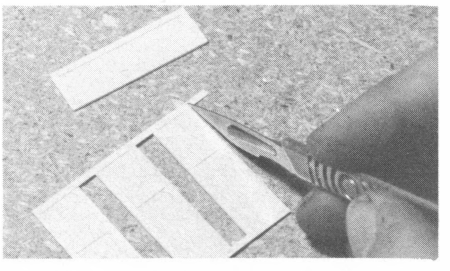
Next comes the door openings, one to be bricked up, the other to have its doors fitted. A 'T'-shaped section was added to the left hand door (as shown on the drawing). This was constructed in the same manner as the rest of the walls, that is, with double thickness 20 thou plastic card, separated by 5mm spacers. Here you can see the last spacer being added. Note the pre-scored spacers to the left of the photograph.



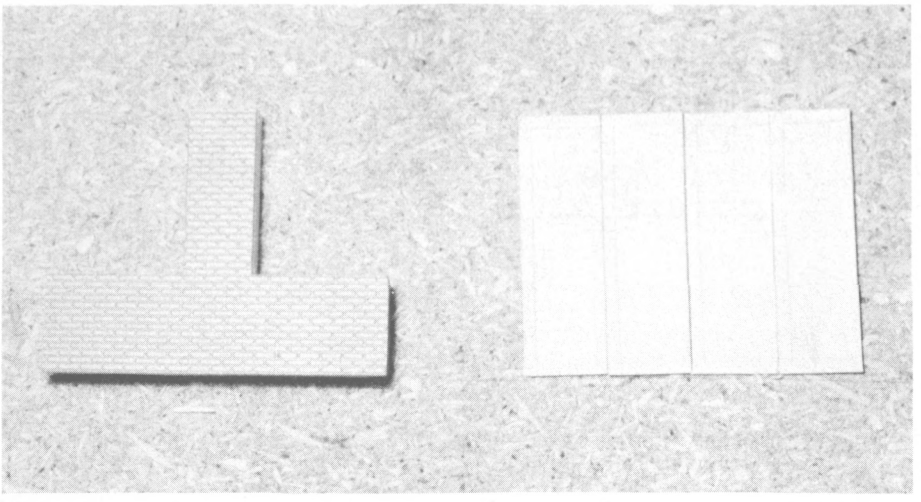
Last time we showed you how we built the shell of the shed and how the slates were made. The next job is to add the 'modern conversion' in the form of the integral office at the left hand end. This involves 'bricking up' one of the door openings and adding some steps to the left hand end. Brick was used for this as the price of stone at the time of conversion was prohibitive! The other piece of construction work required is the erection of a weatherboard cover at the right hand end. This is to protect the lorry and men when loading and off loading during bad weather. And so we continue our picture sequence...



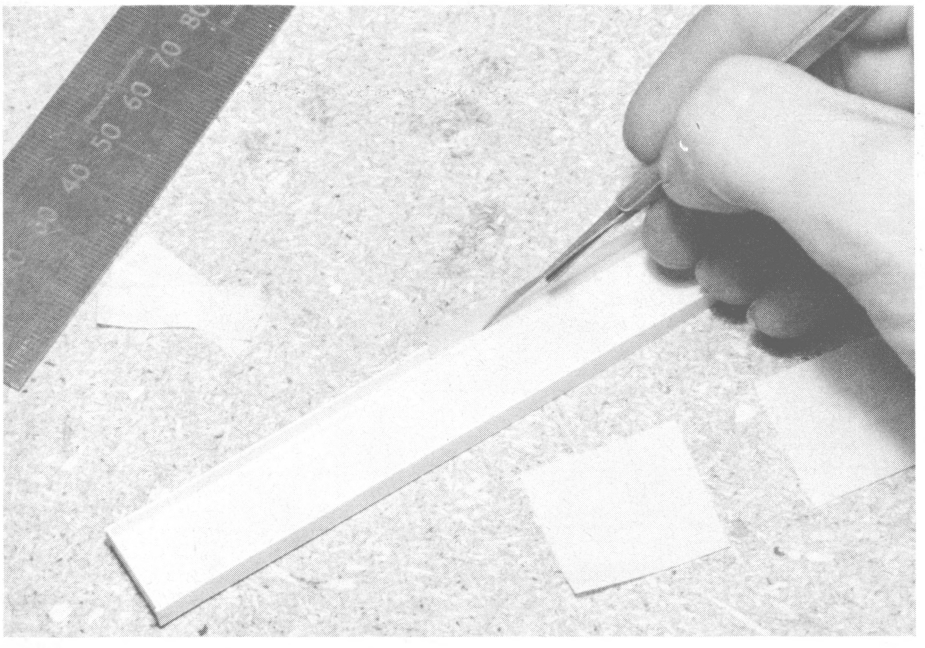
The doors for the other openings were again made from 20 thou plastic card. To ensure alignment of the framing all four doors were assembled together and the plastic strip cut off in-situ. A wood grain effect was simulated by brushing a small amount of Mek-Pak over the doors until the surface of the plastic just started to lift.



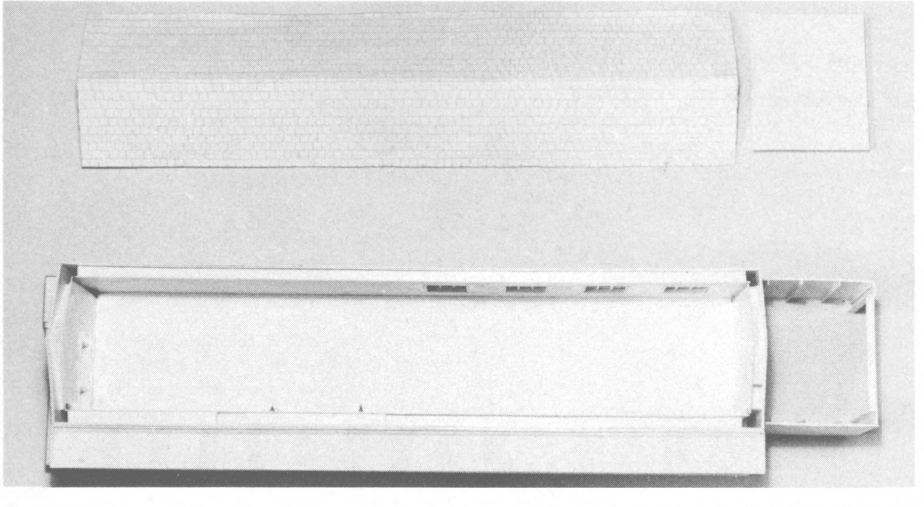
When set the doors were trimmed from their plastic strip retainers using a sharp knife — any 'bad' cuts were made good by gently 'sanding' the edges.



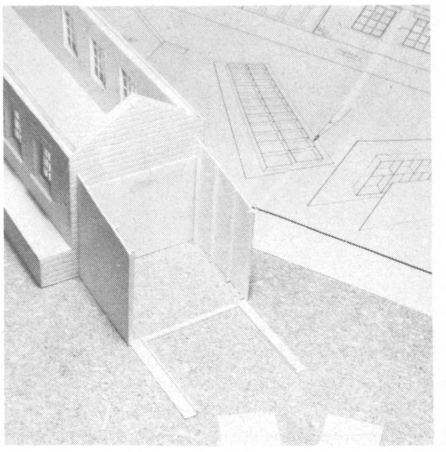
On the left can be seen the 'T'-shaped brick infill ready to be inserted into the opening. the four doors can be seen on the right ready for fitting.



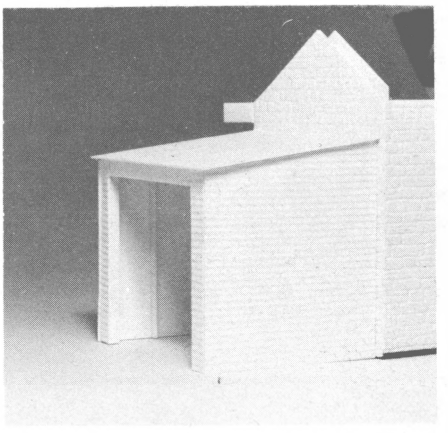
The canopy frame was built from strips of plastic card with a larger piece for infill. This infill has a slope towards the roof. Where it joins the rear piece of frame a piece of plastic rod was cemented to simulate a strengthening strut. The fact that it is round doesn't matter as it will be covered with asphalt! Modellers' asphalt comes in rolls just like the real thing except it is called 'masking tape'! Here we fitted it in small squares and trimmed off an overhang with a sharp knife.



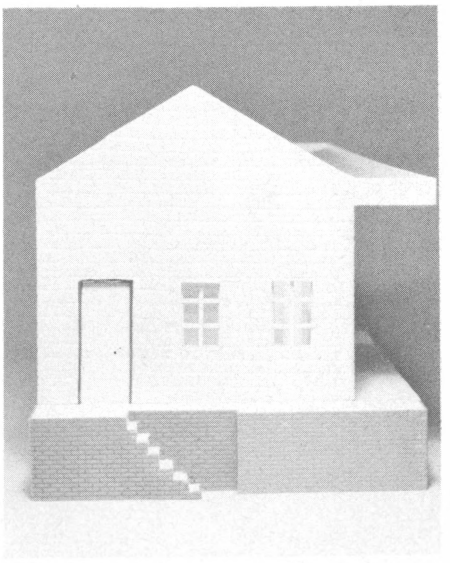
The building of the shed is now complete. All that is required is for the roof to be added. The lean-to roof is made from plastic card with 'asphalt' laid over that. The only other addition is a partition wall between the office and the storage space. This was made from one sheet of 60 thou plastic card as it does not need to be particularly strong – just like the real thing!



Truck cover is provided by a small lean-to at the right hand end. This was boxed with 20 thou strip. These not only represent wooden uprights but provide the necessary support to the thin walls.

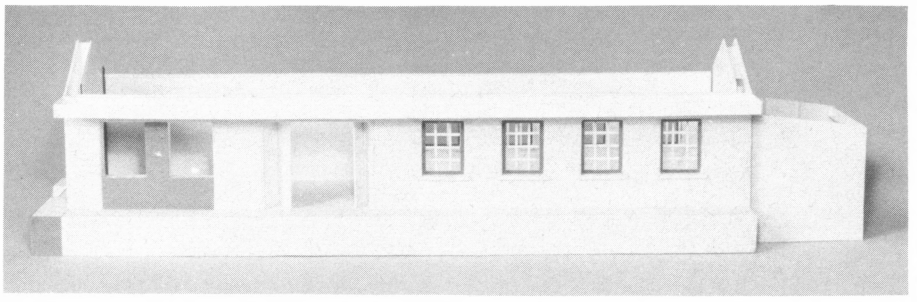


Viewed from the rear, this shows the lean-to with its roof in position. The lintels are yet to be added to the windows in the rear of the building. The deep set of the windows can also be clearly seen.



The office end of the building showing the steps, doorway and windows. The brick pattern will be scraped away to represent the end of the concrete steps. Again the lintels are yet to be added to the door and windows.

Continued next page

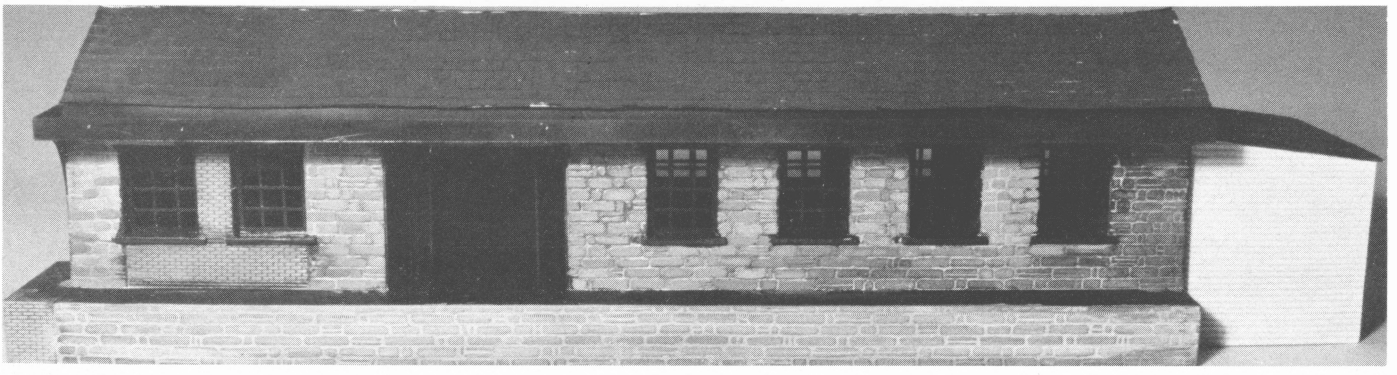


Front view of the model showing the brick in-fill and doors. Windows are not yet fitted, but are made in the way described last time, for the rest of the windows. We kept the doors open to give the impression of use. **(picture below)**

We decided to fit all the final detail such as fences, brackets, gutters, drainpipes, etc, once the model is in position on the layout. In came the painters. First, the entire model, inside and out was sprayed Dirty Black (Humbrol). This does two things; it provides an even colour base to work on and if you do miss anything it shows black – not white which is very noticeable. All the 'woodwork' was painted dark green (doors, windows and canopy). The stone work was given a wash of light sand and left to dry. Then using a piece of sponge as an applicator it was given a patchy coat of dark grey. The sponge only puts paint on the high spots (leaving the mortar light sand). Before this was fully dry a darker sand colour was applied to each brick in a random fashion. The grey mixes with it giving slight colour variation to the overall effect. This may sound a daunting task but once you get going it doesn't take that long. The end result is extremely pleasing and well worth the extra effort required.

Next time we will show you how we started the scenery on the Kemfurco end of the layout and how we seated these two buildings into the 'ground'. The other building, the transfer shed, was described in the June 1980 issue.

Previous instalment was in the September 1980 issue.



Bookshelf

from page 13

with two old clerestory roof vehicles with coke stove heating . . . in the 1960s! There's much more to give you modelling ideas for American style layouts. The big glossy pictures of this large format soft cover album are supported by informative captions, introductions to each section, area maps, and several colour plates.

USRA 2-8-8-2 Series, *by Thomas Dressler. NJ International Inc, Hicksville, New York. In UK from Victors, 166 Pentonville Road, London N1. £7.12.*

The US Railroad Administration was established in the World War I period to co-ordinate the efforts of the US railroads and the railroad supply industry in the war effort. Standardisation of designs was given priority and the USRA came up with a series of basic types from small switcher to main line passenger engine and encouraged railroads to order these rather than 'bespoke' designs. Several of the designs were so good that they were built (and developed) right up to the end of steam locomotive production. Top of the range was a giant Mallet articulated compound type suitable for hauling big freight trains over steeply graded routes. This 2-8-8-2 design was based on one already in service with major coal-haulier Norfolk and Western Railroad in Virginia. A 2-6-6-2 'light' version was also developed. This beautiful book tells the complete story of all locos in the series, and the post-1919 developments, culminating in the Y-6b class of 1952. Rivarossi/AHM have a ready-to-run Y-6b (and have done variations) and there have been N scale models too. If you have the model, then this book is the essential reference for converting or detailing. Colour art, scale drawings, class lists, data tables, and masses of pictures, many in colour, combine with an erudite text to make this a classic example of how a locomotive monograph should be.

Portraits of Kings, *by B. Holden and Kenneth Leech. £5.95.* **The Branch Line Age,** *by C. J. Gammell. £4.25.* **The Steam Age,** *by C. J. Gammell. £4.50. The Moorland Publishing Co, The Market Place, Hartington, Buxton, Derbyshire SK17 0AL.*

If you like 'King' class locomotives, and better still have the Hornby or Lima models, there is no way you should miss the first of these books. It is a truly superb in-depth monograph which illustrates every locomotive in the class with every change in appearance and livery. This alone is valuable, but add to that the section showing the design features and modifications and you have what every modeller needs. Then add the erudite and informative commentary – which even explains some of the dirt and streaks and how they got there – and you have a reference book of great value. Don't miss it! The other two books are conventional 'picture album' publications, but the photo selection is good, with some unusual subjects and some lesser-known operations in some instances. The branch line book is probably the most useful for modellers, for it has a good choice of interesting locations, including small East Anglian branches which will yield layout ideas and references.

Blue Triangle, *by Alan Townsin. The Transport Publishing Company, Glossop, Derbyshire. £9.*

For bus enthusiasts this book is an absolute 'must'. It doesn't claim to be a definitive history of AEC buses, but that is what it really is. There are over 250 pages of beautiful archive shots, including much colour, from the earliest AEC bus types to the very last, with all the design in between fully described and illustrated. Also the influences and background information on new designs are all there – the author worked in the AEC design department and is well-known as a writer on bus subjects. If you like buses and bus models this could be your ideal Christmas present!

If you want a calendar for 1981, try the 'Modern Traction' version which we have received. Every month has a modern BR picture, in colour or tone, with space for notes as well, and photos are from noted recorders of the contemporary scene such as our contributor John Chalcraft and Ivo Peters. At the end of the year, crop off the calendar section and you have a collection of photos to keep. Price is £1.25 plus 15p P&P from Rail Photoprints, 8 Paulmont Rise, Temple Cloud, Nr Bristol, BS18 5DT.

Class 37

Improving and detailing your Hornby model

Class 37 locomotives have been doing a hefty job of work for BR for getting on for 20 years. They are big-hearted veterans which look as though they will be busy on BR metals for some years yet. Currently they are particularly familar on Welsh lines, in the north, and in East Anglia — and may still be seen on passenger duties in the east even though they are mainly used for freight work elsewhere.

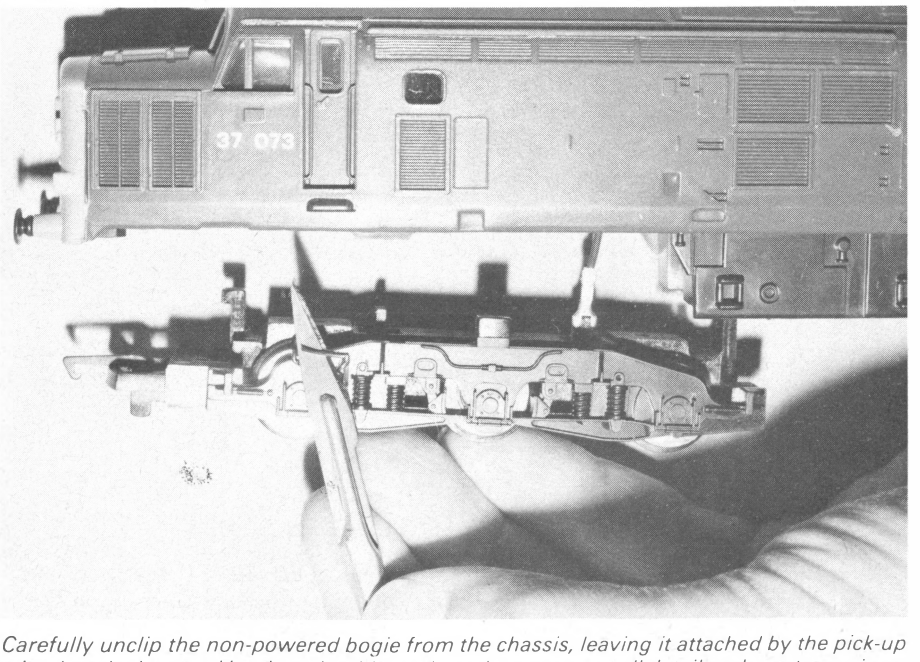
Hornby have produced a nice 00 model of this important type for some years now, and from the modeller's point of view it is a useful one to have as it is not too long and is quite at home on secondary lines and minor duties as well as hauling big main line trains.

Curiously enough Hornby have succeeded in capturing the character of the Class 37 almost to perfection, and this it achieves even when the model suffers from a few basic inaccuracies. For this model incorporates some production economies, chief of which is the use of Class 47 bogies, superficially similar to those of the Class 37 but wrong in essential details. For example, the sides are rather too deep and the steps line up with the Class 47 cab door but not with the Class 37 cab door. Because of the bogie length, too, the belly tanks have been reduced considerably and are noticeably too short. For all this, the model is still a good one, and the body checks out very accurately against published drawings. The buffer beam tends to be a little too high, in the Old Hornby fashion, but not noticeably so, and in overall dimensions of height and length the model is spot on. And the body moulding is first class, with virtually all the detail accurately positioned.

It takes only a little extra work to enhance the model some more, and make its bogies and belly tanks more accurate. The pictures show how we did it, all in easy stages. It must be stressed that this does not give 100% perfection. The bogie frames are still too deep and only new bogies of true Class 37 type would overcome this problem. However, we've chopped the bogies to allow belly tanks of correct length and depth and we've put the essential Class 37 detail on to the bogie side frames, keeping it all as simple as possible.

With so many detail variations within the class it is essential to find an actual locomotive and detail your model accordingly. No 37280 shedded at Cardiff Canton, but here seen with 37288 at Raydr in May 1978, is a typical late production machine with very clean nose carrying only one overhead warning sign. We chose to base our model on this locomotive (John M. Capes).

This is the Hornby Class 37 straight from its box showing the use of Class 47 bogies, resulting in belly tanks which are too short. These are the main areas which can be improved.

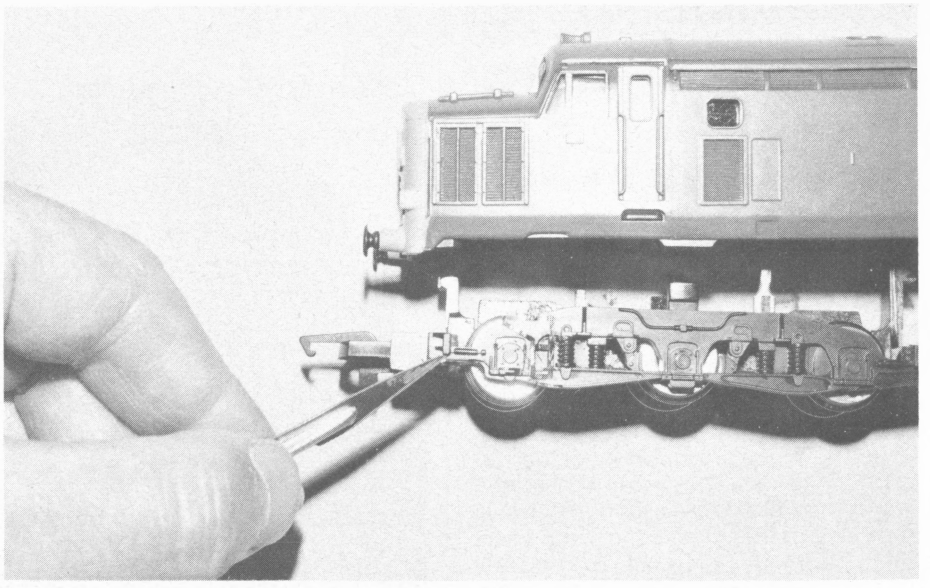


Carefully unclip the non-powered bogie from the chassis, leaving it attached by the pick-up wire. Lay the loco and bogie on its side, and gently carve away all detail such as steps, pipes, brackets and lugs from the bolster sides. Use a new blade in your craft knife or scalpel to make a clean job of it.

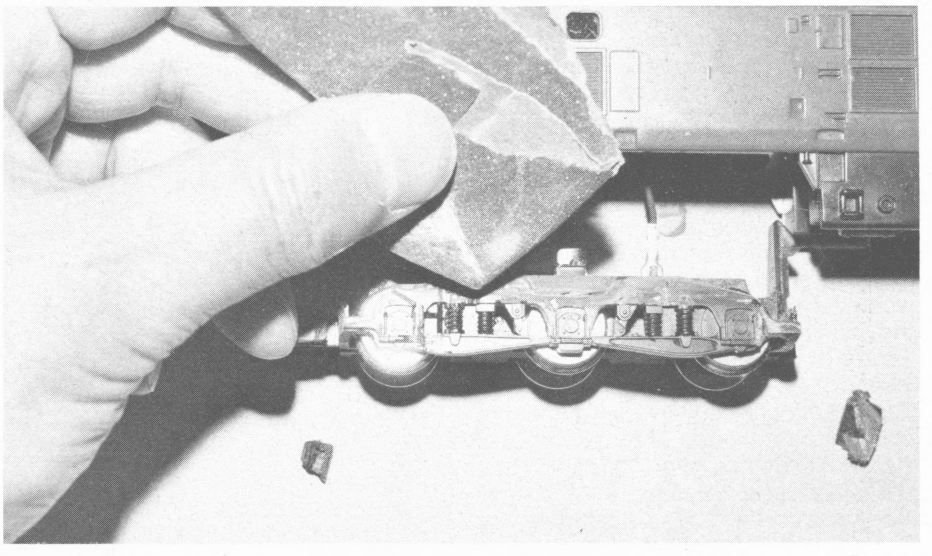
The earlier production locomotives, typified by 37116 near Cambridge in April 1976, had the air horns in the nose behind small grilles, and split number boxes flanking the nose doors. The cab roof ventilator was set nearer the roof edge in the absence of horns (John M. Capes).

We've made a current model, but obviously you can opt for the earlier green version. You need plenty of references and *BR Diesels in Detail* (Bradford Barton) and *British Rail Main Line Diesels* (Ian Allan) are key books to look at, though Class 37 pictures can be found in many other books. Or see the real locomotives at work if they operate in your area.

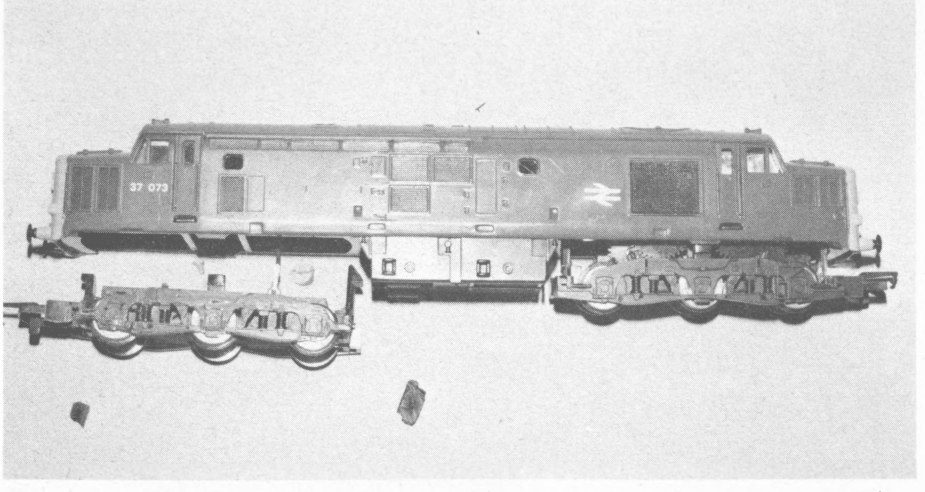
One last point: you must use the current production model for this conversion as it has plastic bogie sideframes which can be worked easily. Earlier versions had cast metal bogies which would be difficult (or impossible) to alter. We've stuck with a late production version, and obviously a little more work is needed on the nose if you want to add doors and twin number boxes.



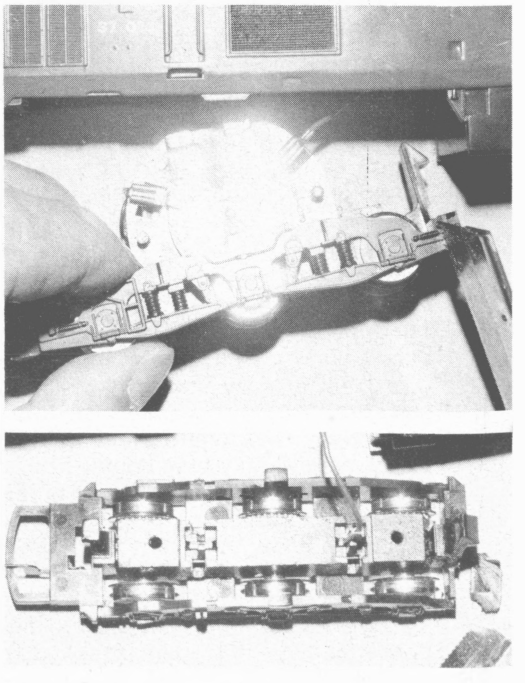
In addition to carving off the bogie side detail, cut away the excess plastic moulded outside *the lower bogie frame lines at the ends. This is non-prototypical even for the Class 47 and is presumably put there by Hornby to beef up the strength of the plastic at the corners. Here we have just cut this from the front end. Its removal has no effect on the rigidity of the plastic.*



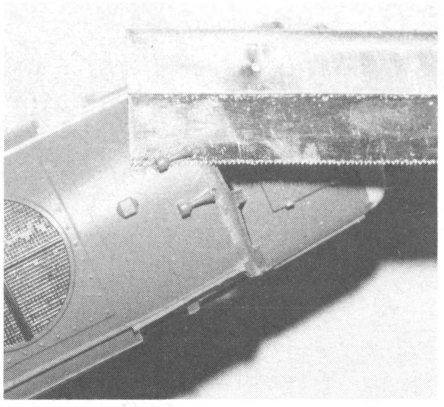
Next saw off the lumpy box-like extensions which are moulded on each corner of the bogies. The discarded pieces are seen here. Then use fine glasspaper to rub down the bogie sides to give a smooth finish devoid of detail.



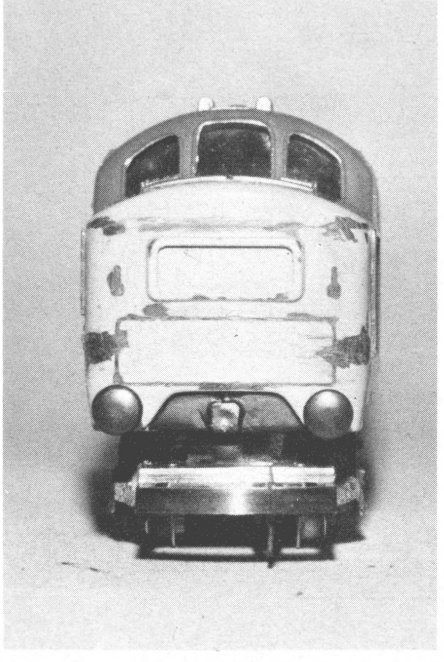
Above: *This view shows the 'before and after' of the bogie alterations — 'after' on the left — and study of the picture shows what has been cut away — the bogie at right is unaltered.*



Right: *Repeat the process for the motor bogie. Here we see the unwanted corner extensions being cut off with an X-acto razor saw. It is important, however, to retain a web of plastic across the ends of the bogie frames. Lower view shows the first of the corner pieces and you can see the web of plastic which has been left in place.*

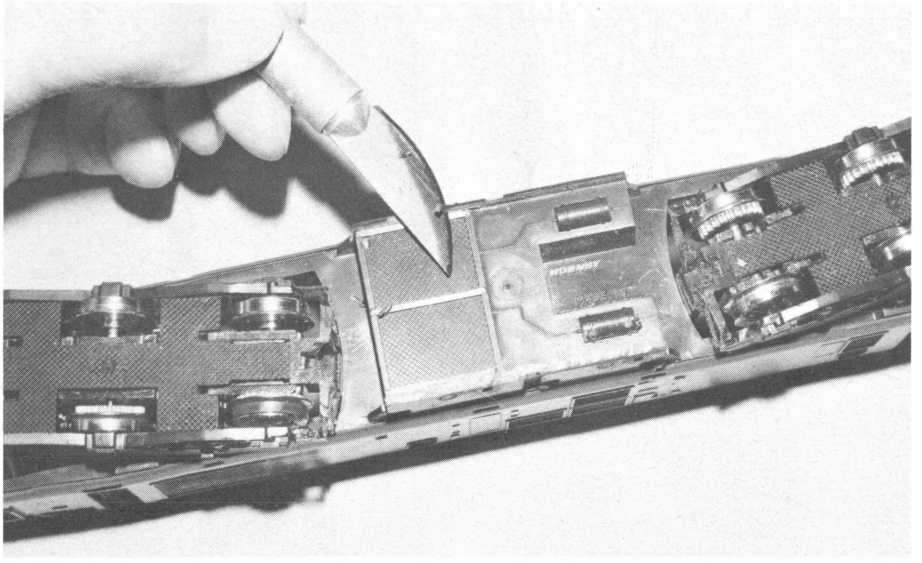


Turn to the body. Cut off the horns on the roof, very carefully, using a razor saw to remove them flush and in one piece. Also rub down the small ridge moulded above the cab windows. Then cement the horns back in place, this time further forward so that the ends are flush with the cab front.

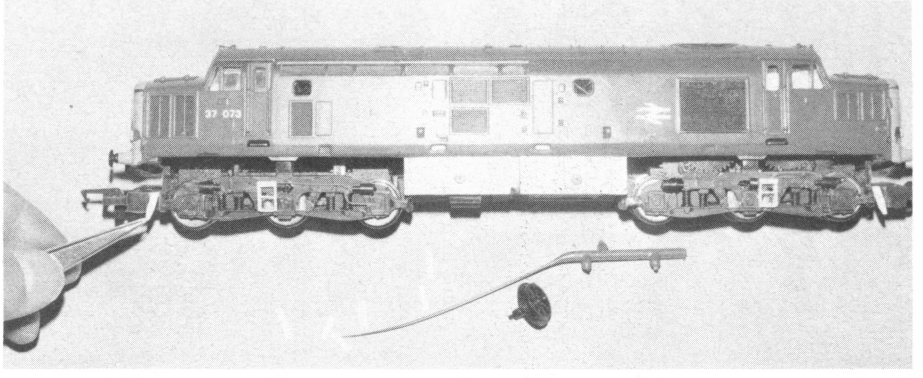


From the nose cut off the hand rails moulded on the corners forward of the side grilles. Very carefully cut off the tail lights from the corners of the body, filing the corners smooth. File the lights flat and cement them further inboard, vertically above each buffer but at the same height as before. Also cut off the lamp irons and cement one adjacent to the left hand tail light at each end. File away all other small ridges on and around the nose. The front end will then look like this.

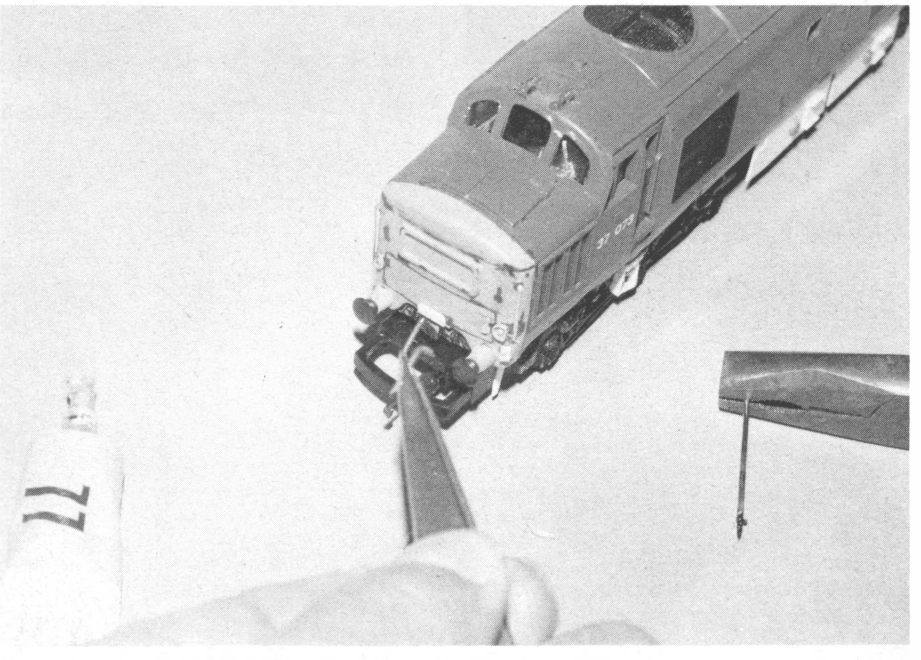
Return to the front of the loco. If you retain the tension lock coupler there is not really room for all the pipe connections of the real thing. However, we found that four connections were certainly possible, representing from left to right, MU, vacuum brake, steam heat, and air brake pipes. On the left hand side and ETH connector box is required just alongside and above the buffer shank. A length of fuse wire is looped around the corner to depict the ETH cable. Two pieces of guitar 'G' string and two pieces of bell wire are used for the buffer beam connectors. Drill out holes to take them. Then use Bambi staples cut down to depict windscreen wipers.

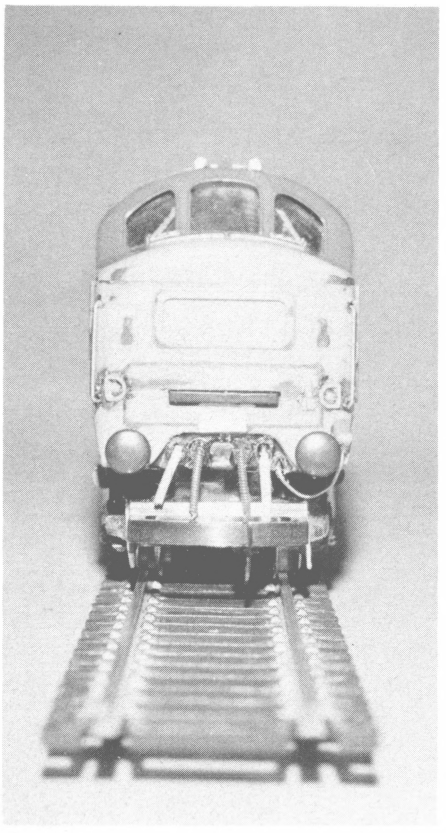


Cut down the bottom edge of the belly tanks flush with the underside. File the lower edge to a slight level.

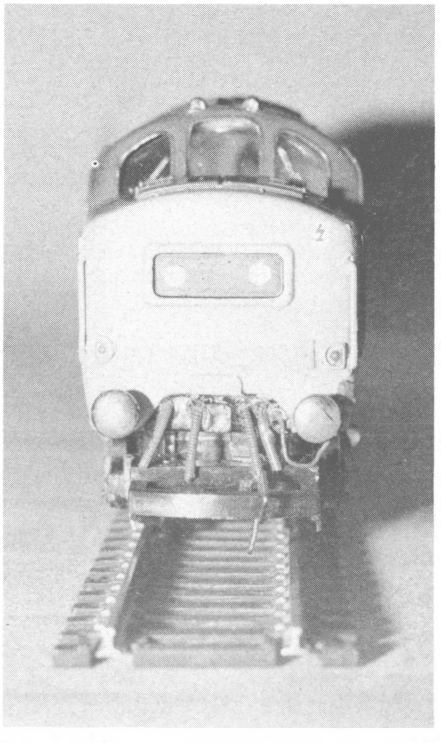


Cut new belly tank sides, 11mm deep and 32mm long. These are the correct length and just clear the modified bogies — but check the model to make sure. If the inner ends of the bogies foul the new tanks, file down the bogie frame ends a little more. Make corner cut-outs, add step plates under the engine room doors, and fuel gauges from discs. Each bogie now requires a new set of steps ahead of the centre axle, and plastic card Microstrip is used to make these. The upper step has a kick plate on the edge giving a 'solid' appearance at the top. Cut new traction motors from scrap — we used 5mm lengths of axles from discarded wheels left over from Airfix railway wagons. File these flat one side to form half cylinders and cement them to the bogie sides adjacent to the axle boxes. Note that the centre axle traction motor is partly obscured by the new steps and therefore it is represented by only a half-length piece. Lastly use heat-stretched sprue to make a speedometer cable led to the third axlebox. Make dumb irons from plastic card and cement them into the leading corners of each bogie against the tension lock coupler mount as we are doing here.

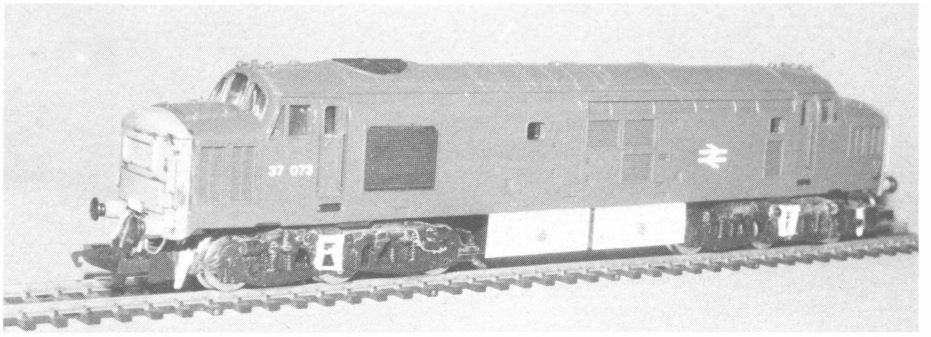




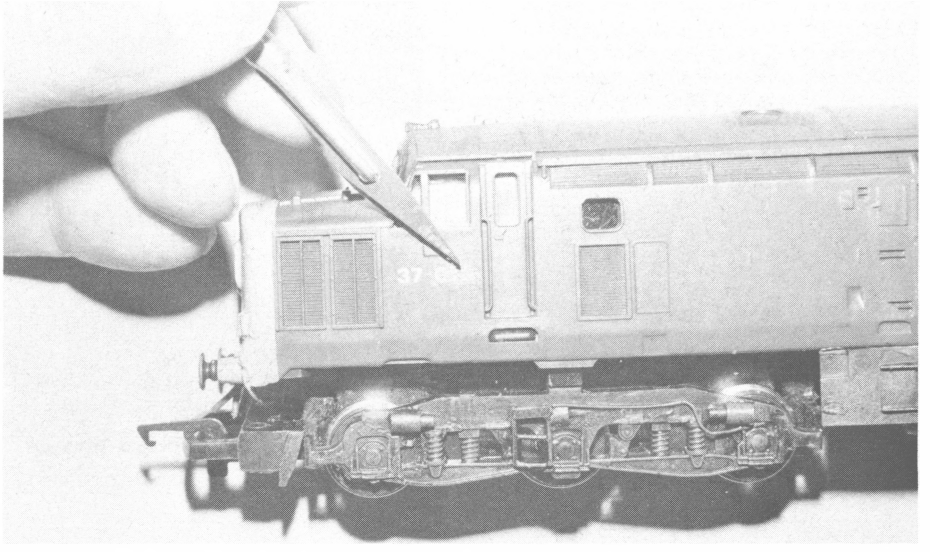
A nose strengthening plate is cut from plastic card and cemented centrally on the nose. Four Rexel standard staples are then used to depict the prominent handrails on each corner of the nose. Use either a hot pin (right) or a Minidrill to make the holes required for all pipes and handrails.



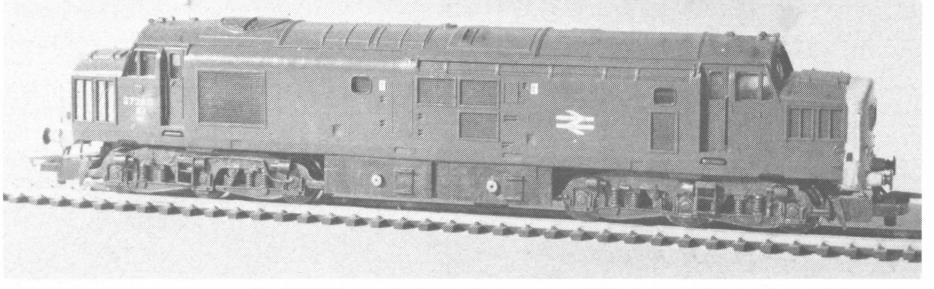
Here's the front view after all painting is complete. The two white dots are from Blick sheet BOE 60 (white), just right for the job, while the overhead warning sign is from the Kings Cross Letraset sheet of BR dryprint transfers. The various pipes are painted a dirty brown shade and it can be seen here that these pipes all flex as the bogie swings as they are glued only at the buffer beam end.



And here is the model cleaned up ready for painting, with all detail work completed. All the plastic card additions are in white. Note how the fuse wire used for the ETH connection is looped and cemented so that it clears the top of the coupler.



Hornby's BR blue finish is excellent and we did not touch this. However the yellow noses we repainted, back to the edge of the side grilles, and bogies and belly tanks were painted Humbrol 'Dirty Black', then dry brushed with Gloy 'Underframe Dirt' to give a grimy appearance. The wheels were also painted black except for the rims. Finally, the old number was gently scraped away (do it very slowly) so that the loco could be renumbered.



Above: *The model completed, with a slight amount of 'wear and weathering' added. The '280' part of the number came from the Kings Cross Letraset sheet, as did the overhead warning signs. The data and shed panels below the number were hand-painted with a fine brush.*

Right: *Close view of finished model. The '0' of '280' is slightly out of line — but it is on the real locomotive, too, though we've exaggerated it here!*

Above: *No 37264 at Cambridge in 1978 is freshly painted and has minimal 'grime' on the bogies. Note that the outer grille has been removed at the far end, revealing the framing underneath. The cab handrails are polished, there are three lamp irons on the nose, and the number is slightly crooked.*
Right: *Nos 37235 and 37176 at Carmarthen in 1979 are both very grimy. Both have brackets above the number box to take a bar carrying a US-style headlight, for working Welsh lines with unstaffed level crossings. Note two lamp irons and two warning signs on 37235's nose, but only one of each on 37176.*
Below: *37089 at Cambridge in 1977 has a 'cross-eyed' look from its twin number boxes with off-centre dots. This is representative of early locos with the double nose door. Note short handrails on corners, painted cab handrails, and side warning signs at different levels (John M. Capes).*

THE HIGHWORTH BRANCH

Basis for a layout

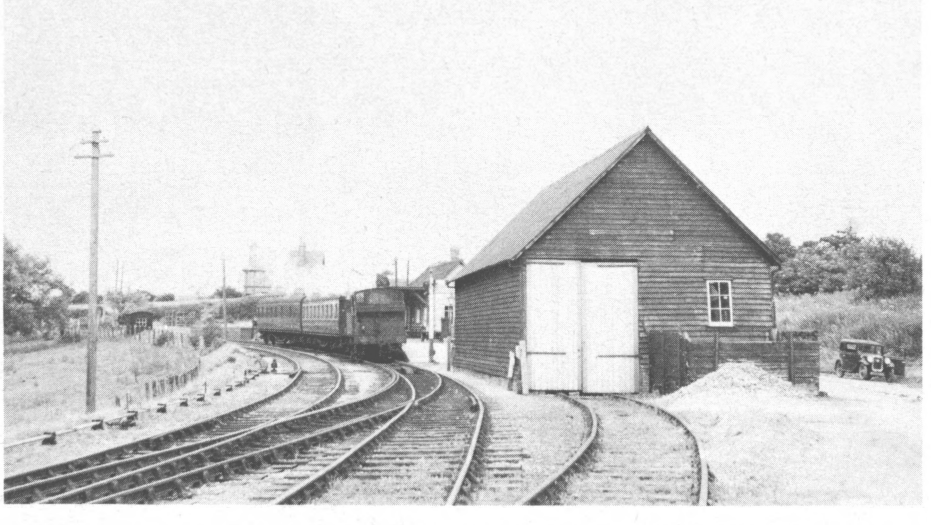
Greg Heathcliffe looks at a complete GWR branch which can be modelled in whole or in part depending on your space.

Although branch line termini have been modelled for many years it is rare to find the rest of the branch actually represented by anything more than a fiddle yard. In some ways this is a pity as with careful planning there is little difficulty in modelling a short branch, complete with not only the stations but the major geographical features.

A good example of such a line was the one which ran from Swindon to Highworth in Wiltshire. At first glance, particularly to a newcomer, a 5½ mile single track line meandering its way through three sleepy North Wilts villages to an equally sleepy market town would seem to provide little opportunity for operation. In fact, as can be seen from the timetable, nothing could be further from the truth, at least when the line was in its prime during the 1920s and 1930s. At this time there were no fewer than seven regular trains in each direction daily covering milk, workmen, freight, passenger and mixed (conveying freight and passenger vehicles in one train) working. In addition special trains were run for the weekly market, a freight service to Stratton when required and not infrequently special late evening trains were run for theatre goers and other late night revellers whose main source of entertainment was to be found in Swindon.

One of the advantages of branch stations, from the modeller's viewpoint, is that of small track layouts but if this makes building the model easy and (just as important) inexpensive it should do nothing to detract from the pleasure of operation. This last point is very definitely present at Highworth where, despite a very simple track plan, one really has some head scratching to do when shunting. Difficult to believe?

1: *Highworth station and goods shed looking from the milk bank about 1959, after closure to passenger traffic (Evening Advertiser).*

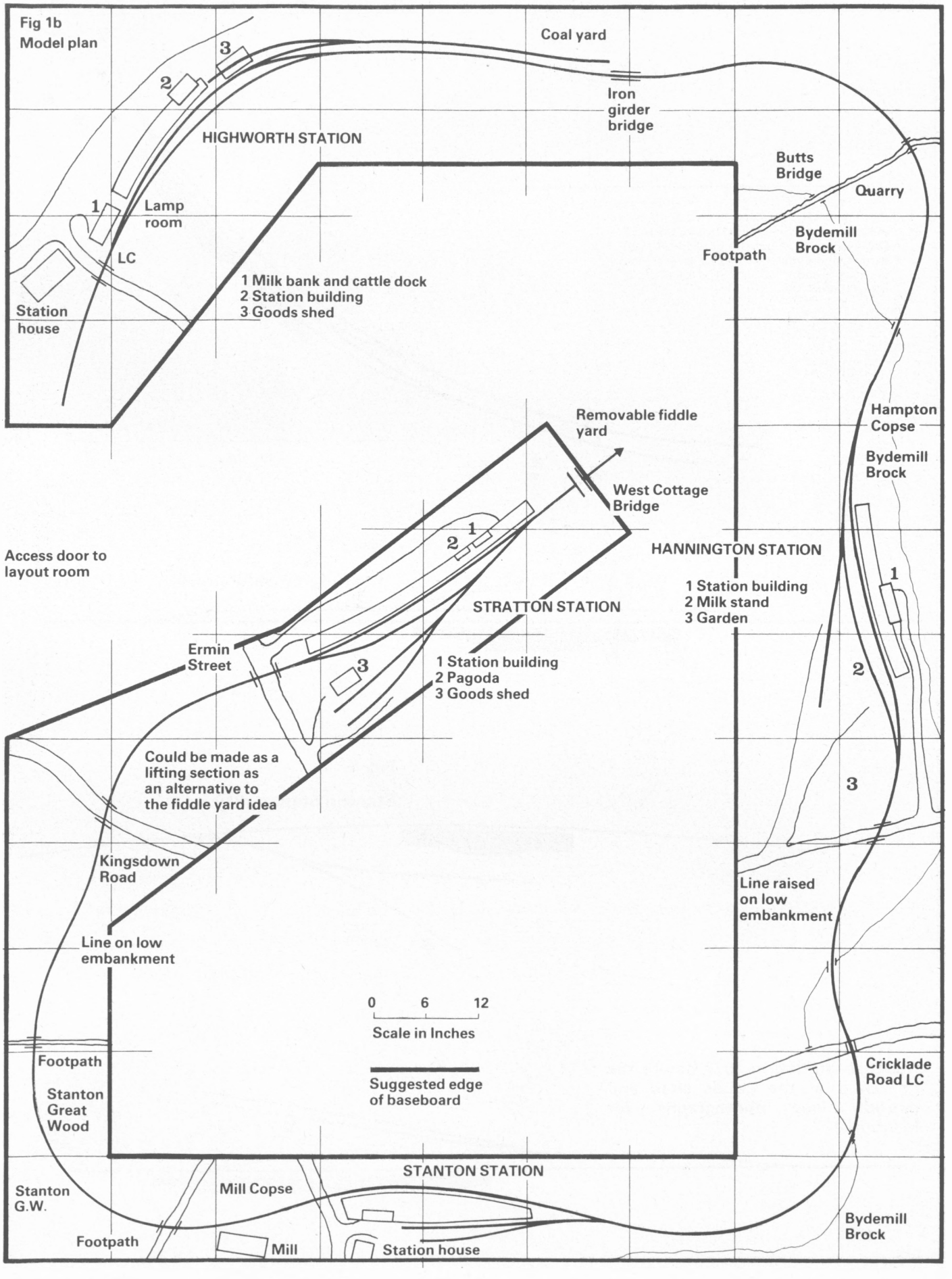


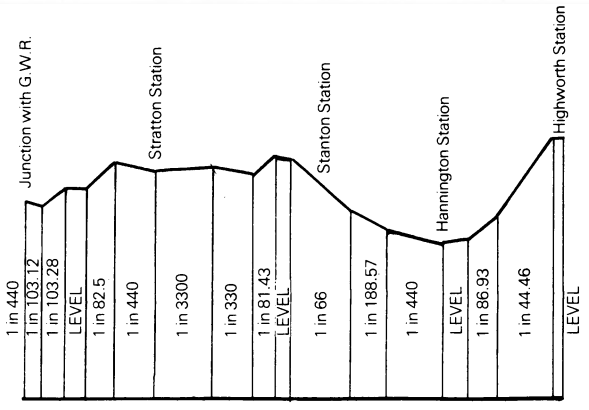
2: *Highworth station from the Swindon end with a train in the platform (R.H.G. Simpson).*

Then imagine a freight train arriving at Highworth with, say, six wagons: one for cattle, two for coal, two for the local mat factory to be unloaded in the goods shed, and one for the local agricultural engineer. Just to complicate matters we will have to collect, say, four empty wagons from the previous day. It must be taken into account that the branch line fell at 1 in 44 towards Swindon and that the timetable allows only 37 minutes for shunting. If you still think its easy then remember that in real life two guards were needed on Highworth's freight trains, one normally an older, highly experienced man.

On the subject of freight it was, for a branch, very heavy. Milk particularly was much in evidence on the branch with as many as 650 17 gallon churns (over 11,000 gallons) being despatched to London daily, mainly conveyed in four and six wheeled siphon vans. Other major traffics on the branch were coal both for the Highworth gas works and domestic use, the latter being delivered by horse and cart as recently as 1959! Also carried were materials for the Highworth Matting Company and

THE HIGHWORTH BRANCH





The official 1894 G.W.R. gradient profile for the branch. The gradients shown differ from the original plans submitted by the S. & H.L.R. Engineer in 1874 but the gradient at Highworth station, which is shown as level on both versions, is shown as 1 in 203 on the 1910 plan of the station.

Fig. 2

Highworth Station 1910

Later modifications include
1. House
2. Coal yard (there at this time but not shown) sheep pens, also cattle and milk docks.

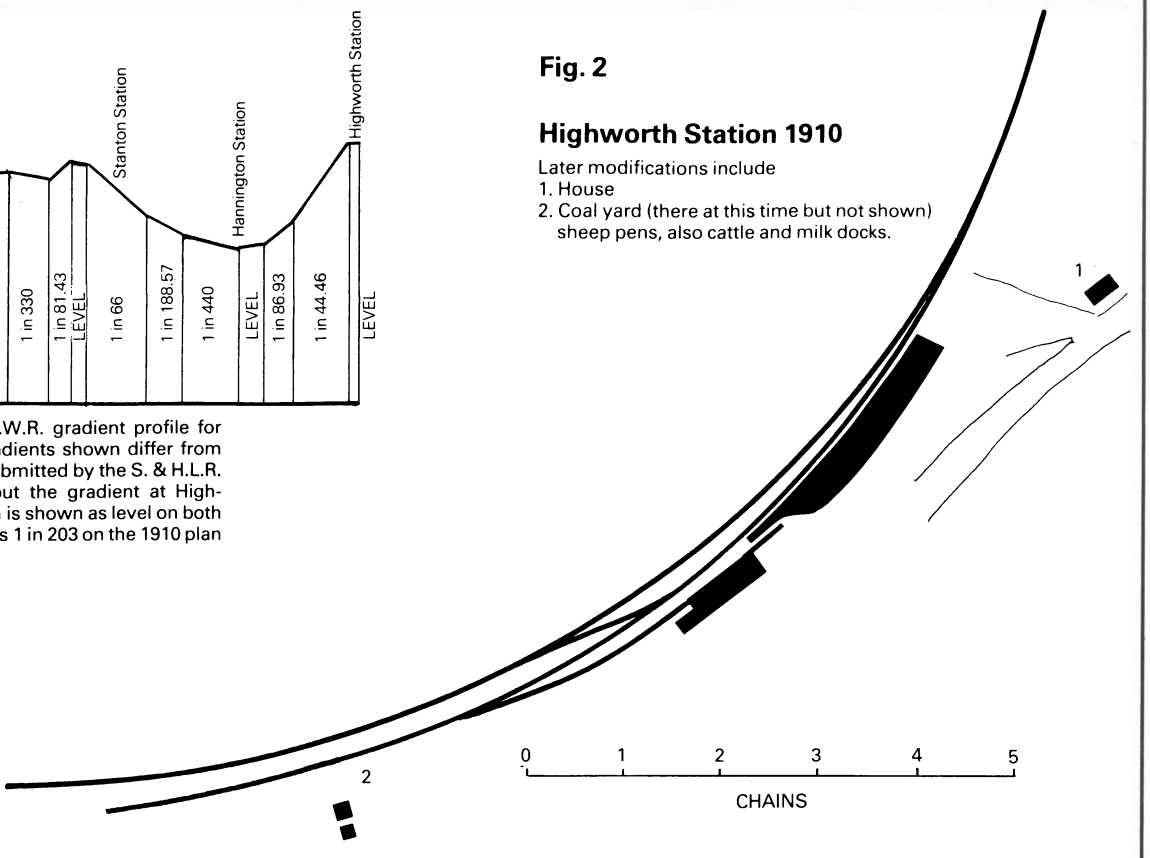


Fig. 3

Hannington Station 1910

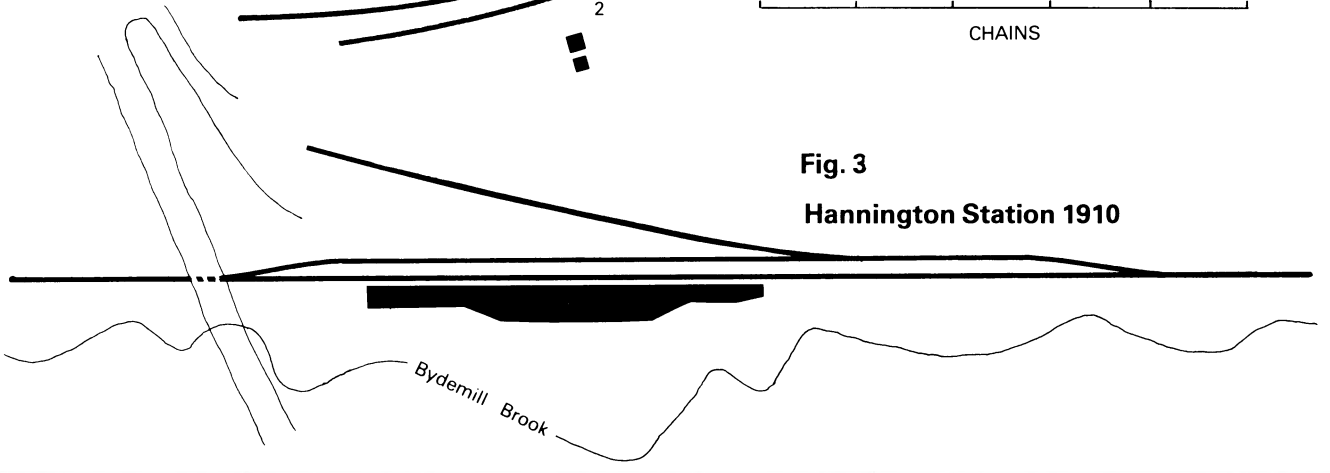


Fig. 4

Stanton Station 1910

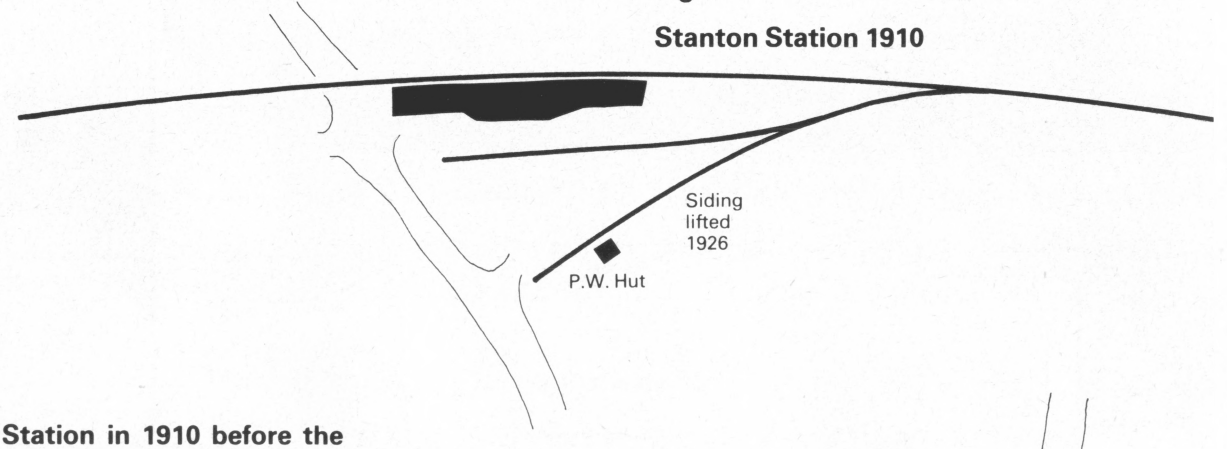
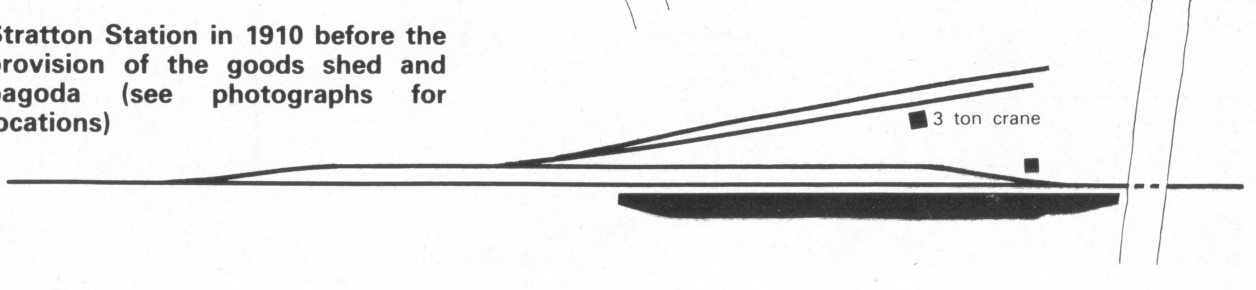
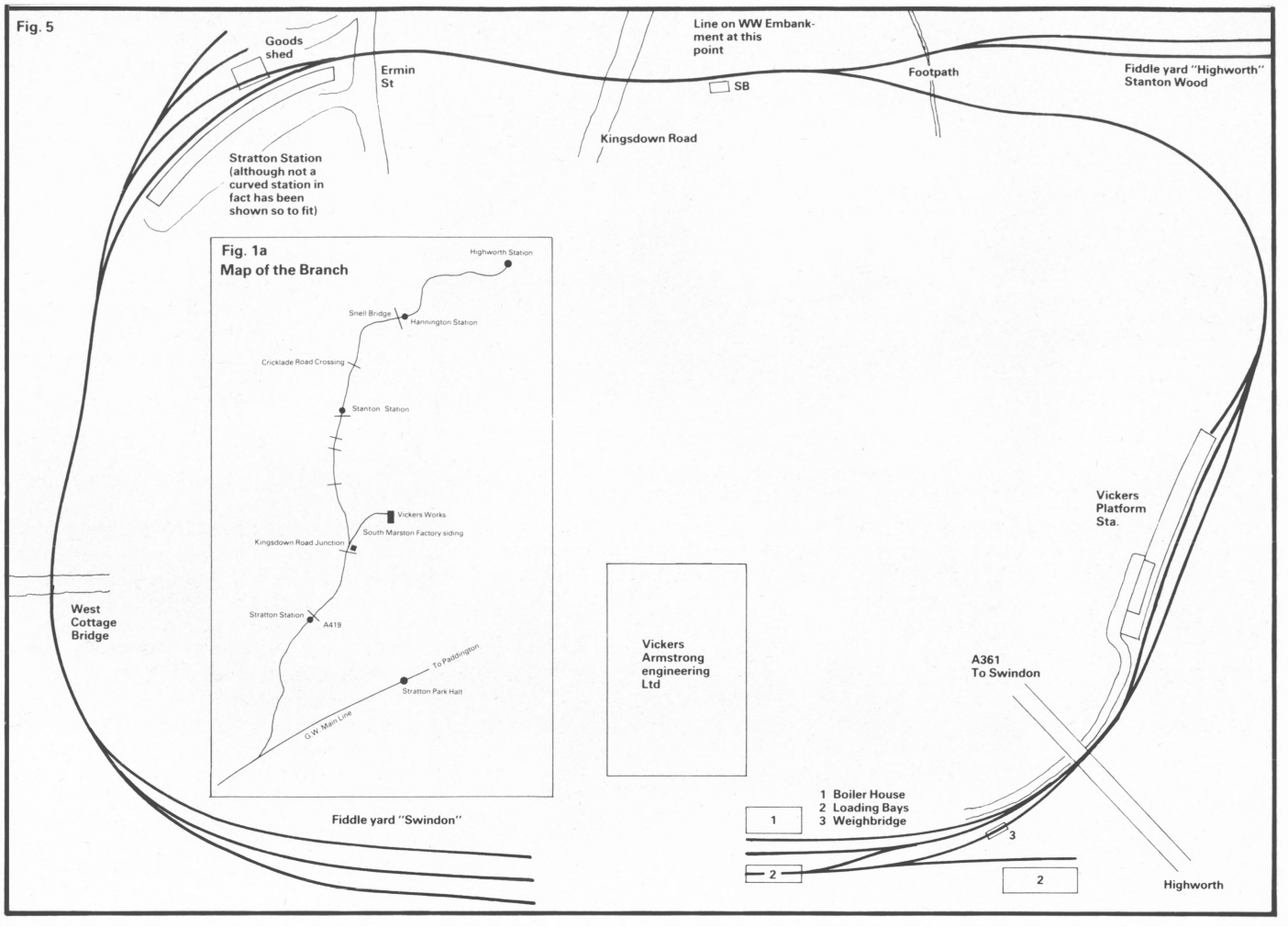


Fig. 6

Stratton Station in 1910 before the provision of the goods shed and pagoda (see photographs for locations)





equipment. One of the main traffics, and perhaps the most unusual, was that of hay. This was collected at most of the stations on the branch and taken to South Wales for the pit ponies. As the subject of freight takes up an entire chapter in a pleasant little book *The Highworth Branch* from Wild Swan Publishing, which is to date the finest work available on the line's history, it will be understood that it is impossible to properly cover the matter here, and you can read the book for more details. But enough of the prototype, let us turn our attention to a would be model.

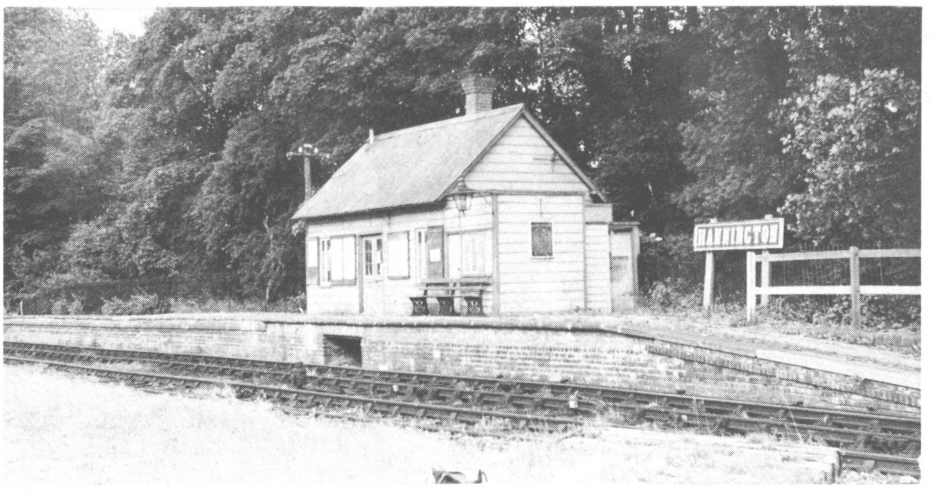
Highworth Station (Fig 2) was not originally intended as a terminus and this was very much reflected in its design. It changed little over the years but more so than the other stations on the line. Common to all stations on the branch was the small wooden building on the platform which held the ticket office, waiting room, station master's office and so on. Later additions to these buildings make them appear different at each station although the basic design was the same. The two major alterations in the station's appearance were caused by the building of a wooden goods shed in about 1897 and a station master's house in 1911. It will be noticed that the station was built on a curve and as such will fit very nicely into the corner of a room. There is plenty of room for expanding this layout without losing the rural

3: *Highworth goods yard showing coal stacks, some freight stock and a PW hut (R.H.G. Simpson).*

charm. For example, a small locomotive shed could be built, such as the one at Tetbury, or perhaps we may imagine that the promoters had had their way in 1873 and that the line was pushed north to join the East Gloucestershire Railway at Lechlade. Even left alone the modeller, and particularly shunting enthusiast, will find that Highworth makes a very challenging layout in its own right.

Moving on from Highworth the line ran down Butts bank, the steepest railway incline in Wiltshire, under Butts bridge, passed alongside the old quarry at Hampton and arrived at the station of Hannington.

The station (Fig 3) had no public road access to the platform, this being provided by a footpath from the road overbridge. Here the scenic modeller would find much work to do as it was situated in a shallow cutting with a small wood, in which grew bluebells, lining the eastern side of the route. A large and well-kept station garden grew between the passing loop and the siding but unfortunately, with the passing of years, this tended to become overgrown. Operationally Hannington



4: *Hannington station. The building design was common to all stations, later additions providing the apparent difference, this structure remaining unaltered until closure (R.H.G. Simpson).*

5: *All that remained of Hannington station after demolition (R.H.G. Simpson).*

would be less stimulating than Highworth with the most interesting aspect of working being when a long freight train is halved and each section taken up the bank separately, the locomotive returning for the second section once the first is safely in the Highworth loop. The main reason for this was not so much that Highworth would not take the full train but that the small locomotives in use on the line could not lift more than 88 tons (about 7 wagons and a brake van) up the bank. The same procedure was followed with the worker's trains. These were introduced in 1890 following a request from the men employed by the GWR at Swindon and ran daily until the branch closed on August 3, 1962. They loaded to four coaches when leaving Swindon but by the time they arrived at Hannington two were empty. So as to avoid taking unnecessary weight up the bank they were left in the loop and collected on the return journey.

The next point of interest on the branch was the Cricklade Road level crossing. Until 1928 keepers were employed here but with their removal, control passed to the train crews.

Although of little modelling interest, Stanton, the next station on the branch, must rank as the most unusual. As can be seen from the plan (Fig 4) the station was originally laid with two sidings, the one furthest from the platform being lifted in 1926. The station was never provided with a goods shed, an old van body on the platform serving for this purpose. Even the waiting room clock was unusual in that it had a face about one foot in diameter, very large for this size of station, and perhaps the strangest thing of all was that the station boasted a station master's house, a luxury that even the considerably more important Stratton was not allowed. What made all this so worthy of comment was that, operationally at least, it was classed as a halt with certain trains not stopping from 1905, although it was not officially downgraded until 1949.

Between Stanton and Stratton the line passed through Stanton Great Wood to emerge on the other side near a bridge over the line which carried the Kingsdown Road. It was here that in 1941 was opened a short spur to the newly built factory of Vickers Armstrong. To do this layout justice it should be built as shown (Fig 5) although if space is limited it could be reduced to just the spur itself. Even in this form it would be interesting operationally as, along with the obvious freight trains bringing in raw materials and aircraft spares (Spitfires were built here during the war) the works also had its own platform. Worker's trains, which often loaded to six or more vehicles, did not outlast the war and peace time use of the passenger facilities was restricted a few months in the mid 1950s; there is no reason why modellers should follow this. Retain the service and when it is mixed with the normal branch services, you would have a very busy layout indeed for the size.

If you have room for only one station on the layout then Stratton (Fig 6) must be a strong contender for this position. It was a typical GWR branch line station complete with pagoda waiting room and corrugated iron goods shed, built about 1915. Its operational possibilities should be obvious from the foregoing and will not be repeated here. Goods to and from the station were mainly hops, malt and yeast for the local brewery, stone for the asphalt works, hay to South Wales, and coal. This was a very small station, a baseboard of 11 feet by 4 feet being sufficient for this layout with no compression whatsoever. And this in 00 scale. To many people this no

6: *Stanton Halt, visibly in the depths of the Wiltshire countryside, taken in 1952 and less than a year from closure (H.C. Casserley).*

doubt seems a massive area but it should be remembered that a scale twelve coach train behind a Class 52 diesel would comfortably extend into the fiddle yard on either side of this layout; and, of course, considerable compression, particularly in the width, could take place with no great loss of effect. Scenically Stratton does not have a great deal to offer as the surrounding countryside is mainly flat. The bridge to the north of the platform carried the old Roman road of Ermin Street and is shown in the correct relationship to the station. The other bridge, named West Cottage, was in fact some half mile distance but is shown closer in order to cover the entrance to the fiddle yard.

From Stratton southward we need not concern ourselves with the line as it ran past a large factory complex, served by rail, to join the main Paddington-Bristol line a mile short of Swindon station. It is cheaper and easier to represent this section with a small fiddle yard.

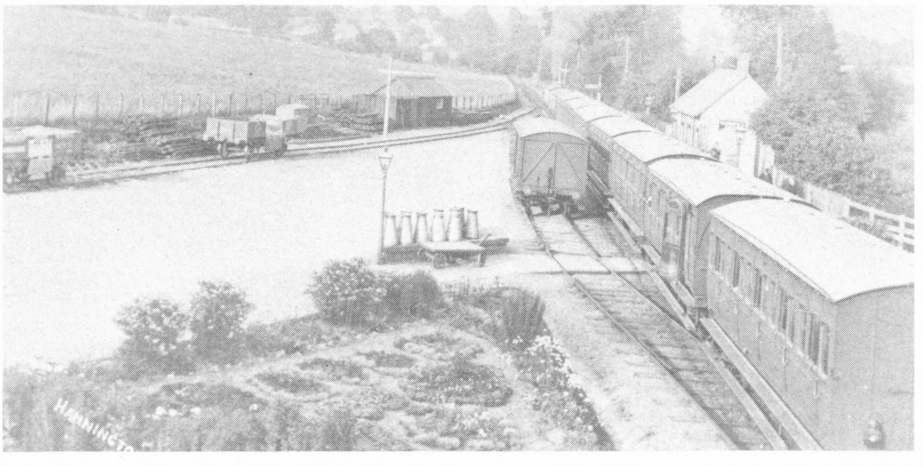
Such signal boxes as existed on the branch were small ground frames mounted on the platforms in the flat topped wooden shelters located on the southern-most wall of the main buildings. With the exception of Highworth all were closed as long ago as 1910 and the signals removed, local levers mounted by the turn-outs replacing them. This was because they were considered unnecessary with the one engine in steam working then in force. Such signals as were left were, at Highworth, a fixed distant, home, starter and two point discs (ground signals) to control the running round of locomotives. Signals, interlocked with the gates, were also maintained at the Cricklade Road level crossing, and of course, Kingsdown Road Junction which had the standard signals applicable to that situation. The opportunity was taken with the opening of this box of installing Electric Train Token (ETT) equipment and Kingsdown Road Junction becoming the main Block Post. Unfortunately it is beyond the scope of this article to provide anything but basic information on this subject and the reader is referred to the series on signalling which began in the July 1980 *Model Trains,* by Dave Larkin.

7: *A photograph of Stratton between the wars showing the Trinidad Asphalt stone crushing plant, behind the crane, the goods shed (centre) and some PO wagons. The buildings in the lower left hand corner were PW huts (Lens of Sutton).*

8: *This photograph shows a 517 class locomotive storming Butts bank in the early years of this century. Its mixed train includes an early GW covered wagon, 'Iron Mink' van and a passenger brake at the rear. The whole train is over the weight restriction for this class of locomotive (Miss D. Russell).*

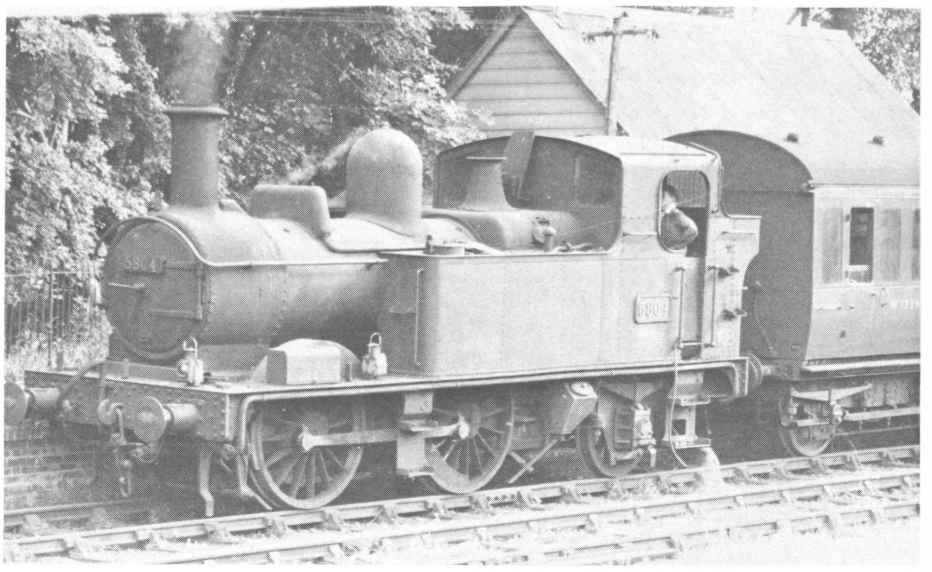
We have touched very briefly on the matter of stock and this is perhaps a good moment to examine the subject further. On the freight side many of the vehicles from Airfix, Hornby and Mainline could be run; those principally required are 3, 5 and 7 plank wagons for coal and hay traffic while Lowmac vehicles would be needed for the carriage of agricultural equipment. Standard 10 and 12 ton vans were, of course, no stranger to the branch and, although a considerably rarer sight, 'Mink G's', cattle vans, horse boxes and fruit vans could be seen when the need arose. Stratton alone handled GWR container wagons as the station's 3 ton yard crane was the only one on the branch that could lift them. There is not quite such a choice of vehicles when it comes to milk traffic; perhaps the best available vehicle is the K's 6-wheel Siphon wagon kit, although a 4-wheel vehicle would be better. Things are a little better on the passenger side as, until 1939, four wheelers were the order of the day and here we have the wonderful Ratio kits to help us. These were replaced by modified suburban stock which is perhaps best represented, although not entirely accurately, by the Airfix 'B' set coaches.

The branch loading gauge was set at



9: *A Highworth bound train of four wheeled Holden stock at Hannington station prior to June 1910. The reason for a train of this length is unknown but it is most unlikely that the complete rake worked through to the terminus. Of particular note are the well kept station garden and signals at the far end of the platform (Collection of H.C. Casserley).*

only 12ft 6in and this meant that the ventilators had to be repositioned on the roof of the stock. This limit, plus an axle loading of only 8 tons led to a severe restriction on the types of engine that could use the line. Despite this a fair selection of classes still ran on the branch and amongst those readily available in model form are the following types: Metro tanks (Wills kit), 14XX class or 58XX (from K's kit or Airfix ready-to-run) or the 16XX class (Cotswold kit). As auto-working was not used on the branch the 14XX locomotives would probably have been less frequently seen than the equivalent 58XX series which were not auto-fitted. In practice there were many more classes to be seen on the branch including 517, 850, 3571 and 1366. Other classes which worked to Vickers *only* included 57XX and 97XX locomotives, the height being of standard gauge on this section after the rebuilding of several bridges during the 1930s. The line was also used to some extent for testing both experimental and recently overhauled locomotives from Swindon works.



10: *Typical motive power on the branch in later years. No 5804 at Hannington with a passenger train to Highworth 1950 (R.H.G. Simpson).*

11: *A 1366 class locomotive with a REC (Railway Enthusiasts Club) special at Highworth on June 7, 1954 (J.F. Burrell Collection).*

Diesels were introduced on to the line in 1960 and were mainly of the Class 03 shunting type. Within two years these had taken over all services to Highworth which, since public closure in 1953, had been reduced to just three workings, they being a daily freight and a morning and evening workers' train, thereby producing the very unusual sight of a shunter on a loaded passenger train. Services to Vickers, and coal to Stratton, were maintained for some years after the closure to Highworth and the Class 03 (kit from MTK) shared these duties with their larger sisters the Class 08 (from Hornby).

In conclusion it may be worthwhile to say just a few words about controllers. It would be perfectly possible to build one cab at a convenient position on the layout and run the whole layout from there. It would also be a waste. If two or more operators were normally to hand, then a small cab at each station is really the only answer. But, for single handed operation, I feel the best way is to use the ECM Rambler (see *Model Trains*, September 1980) which seems to have been designed with just this sort of layout in mind. However, this matter is entirely up to personal choice and I can offer no more than suggestions.

Finally I should like to thank my very good friend Mr T.M. Smith for his help with this article and also those people who very kindly allowed me to use their photographs.

An 850 class kit is now available from M & L (Castings) Ltd, and during a time of severe locomotive shortage in the mid 1940s 0-6-0 engines of the 1901 class ran over the branch. To allow passage over the tight curves part of the coupling rods were removed making them 0-4-2s.

12: *The modified position of the coach roof ventilators can be clearly seen in this 1962 photograph of D2195 (Class 03) Highworth bound with the evening workers' train near Hannington. Although a common sight on this line, 03s on passenger workings were rare, if not unknown, nationwide (Hugh Ballantyne).*

Super-detail for the Airfix Prairie

Mike Wightman gives the 61XX model some 'de luxe' treatment!

Back in the March 1980 issue, Richard Gardner showed you how to enhance the Airfix 61XX class Prairie with a new paint scheme and a bit of extra detailing. This sort of treatment will give your model a nice individual look, away from the 'as new' appearance of the freshly purchased model. But it was by no means the end of the story. Richard Gardner is preparing a further conversion, to a different class of Prairie, but in the meantime I've taken the work on the basic model way beyond Richard's treatment to show how even more detail may be added. I chose the unlined BR green finish for my model of 6106.

The first job is to dis-assemble the loco and remove all possible metal parts from the body. The body should now be stripped of paint and printing. The best way to do this, which I have only seen mentioned in print once before, is with everyday automatic brake fluid. It must be stressed that whenever working with new techniques or materials a little experimentation can save a lot of heartache. May I just say that the years I have been using it (no particular brand) I have not had any problems on plastics or adhesives. I even left a coach body soaking in the fluid over the weekend. Metal bodies do not suffer either. The method is to put the body in a pan, pour a quantity of brake fluid over the subject, then with a stiff brush make sure all areas are wet. This then left for a period of time, 20 minutes to half an hour. This is usually sufficient to dislodge the surface and with a little scrub you should shed the paint. Further wettings may be required depending on the type of paint and/or varnish. When stripped give the body a good wash in warm soapy water and work can then proceed.

The modifications needed for the ultimate in super-detailing are as follows. Read these notes and study the model pictures to relate them to the work.

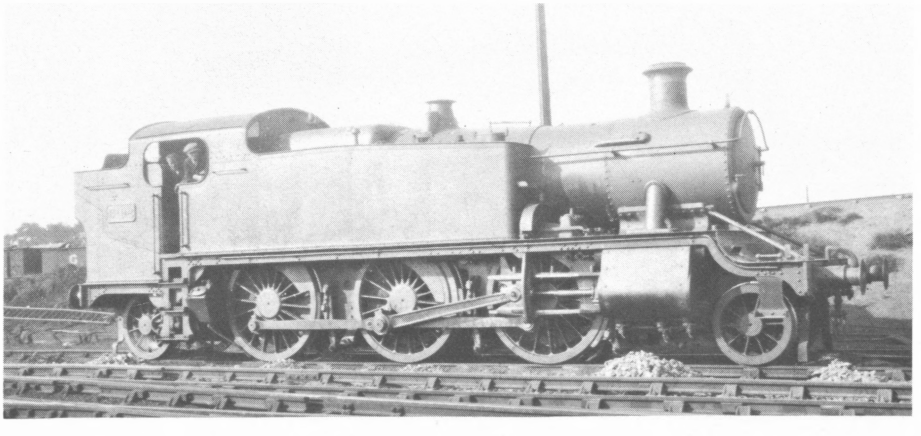
(1) All moulded handrails must be pared off. This is best done with a right angle blade (such as X-acto No 17). Vertical handrails either side of the cab doorways and the handrails on top of the boiler will require knobs. All other handrails are wire bent into the body side. These include handrails either side of the cab doorways and on the side and rear of the bunker. The vertical handrail at rear of the cab on the fireman's (left) side was not fitted on all locos so check the actual locomotive you are modelling if you can find 61XX prototype photos in books.

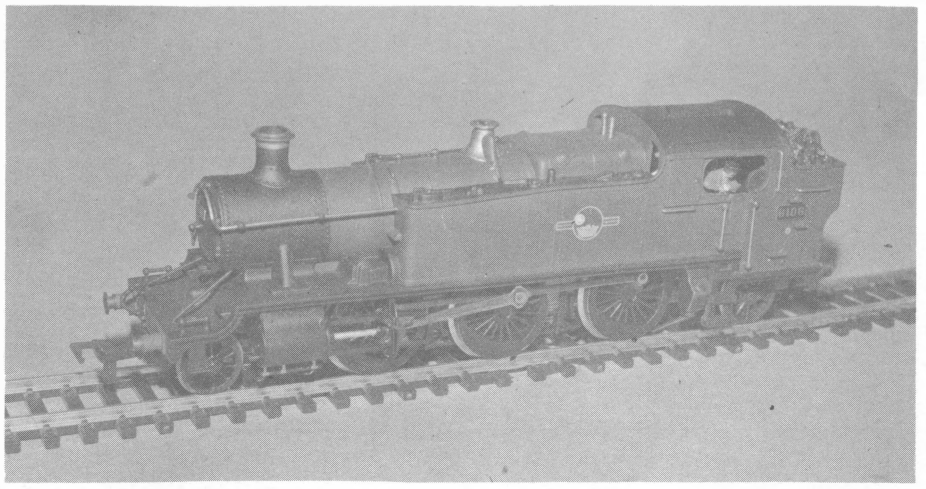
(2) Add bunker steps on the fireman's (left) side. This was a British Railways modification. These were bent from thin section shim brass strips and glued in position with cyanacrylate. Alternatively use 10 thou plastic card and liquid cement.

(3) Vacuum pipes front and rear are given the distinctive GWR style twist.

(4) Driver and fireman figures are needed, cut short to clear the chassis inside the body. The figures in the new Airfix Railway

Heading: *No 4147 demonstrates the main duty for which the 'Big Prairie' type was used, suburban passenger. This was a 5100 class locomotive from the post-war production batch, built 1946. Here it is seen on a Birmingham local in summer 1962 (A.J. North).* **Below:** *It is quite rare to see a 6100 class loco without the sliding cab side shutters, but here is 6102, as built about 1932, without the shutters (they started to be fitted about this time) and with the horizontal handrail set higher. Careful filing could duplicate this shutterless condition on the Airfix model if you wished to make a very early period loco.*





Left: *Mike Wightman's completed model in BR finish showing all the handrail additions and changes and the bunker steps, small details which make a big difference.*

Below: *No 6114 in 1939 in plain green with the GWR 'shirt button' monogram, a nice alternative finish which would look good on the Airfix model. This loco is in rather a grimy state.*

Below, centre: *No 4158, built in 1947, in the fully lined out BR green livery of later years (about 1960). Note polished valve cover and chimney cap. Footplate valance on some 4100 series locos was slightly deeper than on 6100s, or at least appeared to be so.*

Bottom: *Another view of Mike Wightman's model. Note added coal in bunker.*

Workers set are most highly recommended and these have been used on my model.

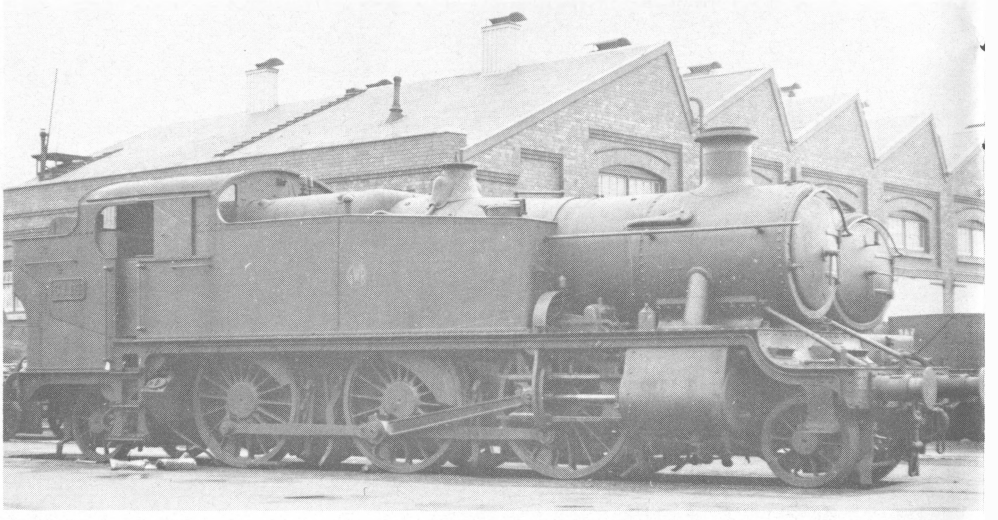
(5) Paint the body BR loco green and black. Do not forget the tank tops as they should be black. If you prefer metal coloured hand rails, as I do, these should be added after painting. Technically Western locos should have rails the same colour as the body. The only loco specified to have metal coloured rails was the 'King' class, but there were locos where the rails were buffed up by shed crews occasionally.

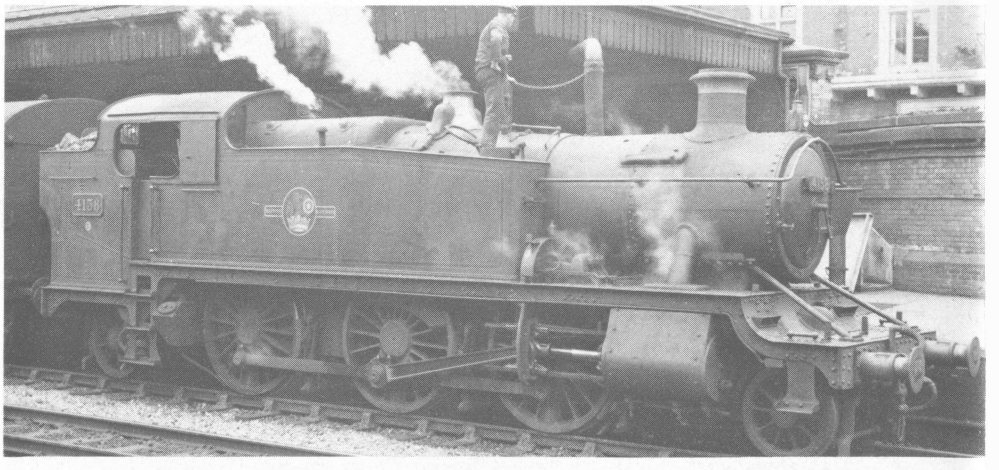
(6) My research to date has shown that GWR (and BRW) of express passenger rating alone carried copper cab chimneys and brass safety valve covers. All other locos had them painted over. During British Rail days, however, *some* mixed traffic and tank locos had copper caps or brass safety valve covers or both. It is not known for a fact, but it is suspected, that this was the result of shed foreman staff and or drivers of the 'old school' or even a bit of esprit d'corps on an individual basis. Again check your photos or suit your own tastes if you prefer copper caps. The vertical handrail on the bunker was installed in conjunction with the bunker steps. When so equipped the horizontal handrail on that side is shortened so as to minimize any obstruction.

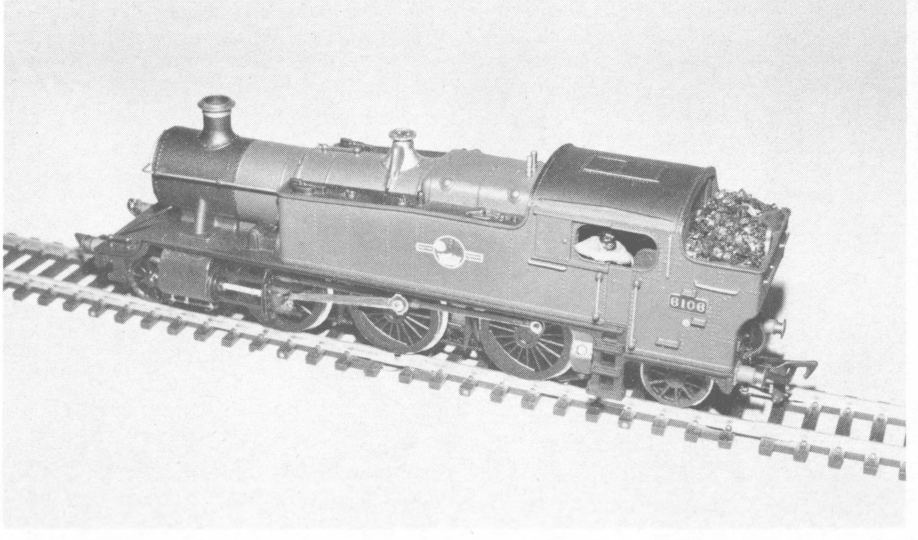
(7) Transfers are Kemco waterslide with Kings Cross number plates. There were many Prairies finished in lined green so a further variation is possible, and GWR lining is available from the same two makers.

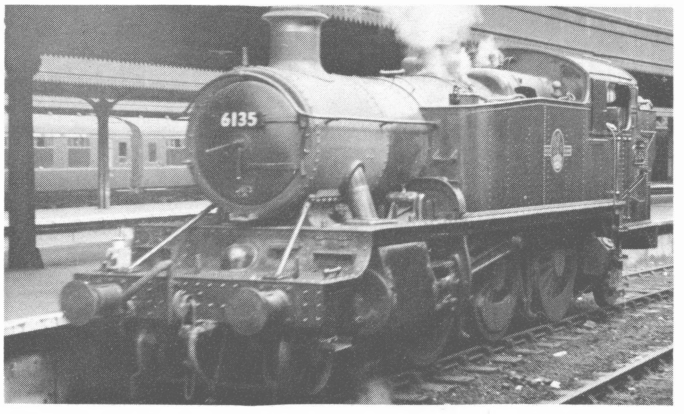
(8) Replace the bogies and pony wheels with more realistic see through types of 12mm and 14mm. If you use Jackson wheels do not forget the plastic inserts. Nothing looks worse than those square, recessed spokes on a loco. The inserts are made to put the proper shape in the spokes. There is one trick I can pass on to you that will help appearances. Use the next size larger inserts with the outer rim then cut off. This eliminates the double thickness of the type and shows the full length spoke. File to suit the new axle diameter.

(9) Spray clear varnish over the model to achieve uniform tone. I use Humbrol matt and gloss polyurethane varnish mixed 6 to 1 for a nice semi-matt finish.







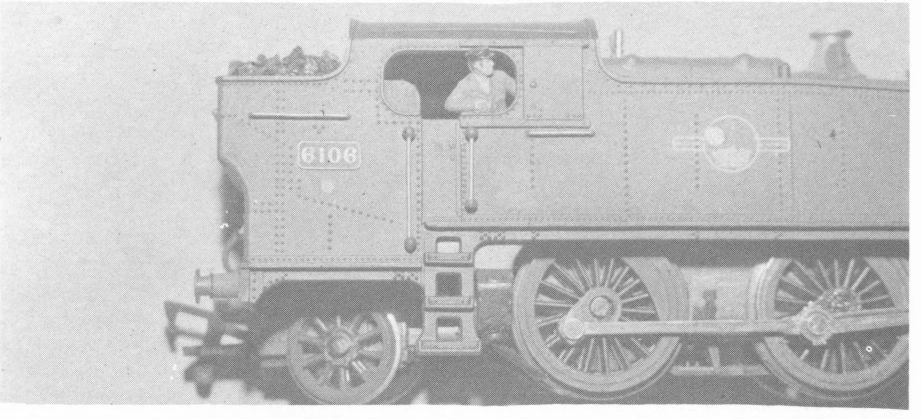


Above: *6135 in the late 1950s is seen at Paddington in the black unlined finish carried by many of the class — another alternative finish easily achieved on the model using Humbrol 'Dirty Black'. The hose used for washing the footplate dangles over the cab side and was frequently to be seen. Could be depicted with soft wire. All details on this loco match Mike Wightman's changes.* **Below:** *Close view of the changes Mike Wightman made to his model.*

Above: *If you look hard enough, you'll find a prototype for everything. About 1956, No 6137 still lacked bunker steps, so if you want an unaltered BR black version of the Prairie, here is one to choose. Add the handrails as described but just paint out the lining, add new number plates and a smokebox plate.*

(10) Lastly paint wheel rims and centres matt black. I left my model perfectly clean as I prefer them that way. Only weathering I did was to darken the motion, but if you want to add some grime to the loco follow the procedures shown in previous articles.
(11) Add crushed coal to the bunker top.

Previous articles on GWR Prairie models appeared in the March 1980 issue.



RAIL BARGAINS

AIRFIX OO

GWR 14XX 0-4-2 loco	£8.25
GWR Castle 4-6-0 loco	£16.95
GWR B set coach	£2.35
LMS-BR Fowler loco	£8.95
BR Class 31 diesel, blue	£7.65
BR Mk IID 1st Class coach	£2.35
BR Mk IID 2nd brake coach	£2.35
BR 60ft, red, cream comp	£2.35
LMS 60ft, maroon comp	£2.35

MAINLINE OO

BR Class 4MT, black	£9.50
BR Collett, black or green	£8.75
GWR Collett, green loco	£11.95
BR Warship diesel, most	£9.95
BR Class 45 diesel, blue	£9.95
England Glory, ICI tank ...each	95p
BR, red, cream BSK coach	£1.95
LMS-BR Patriot loco	£18.95
Royal Scot steam sound, red	£22.95

LIMA OO

BR Class 33 diesel, blue-green	£6.95
BR Warship diesel, green	£7.50
BR 09 shunter.....most at	£7.45
BR CCT, maroon or blue	£1.90
BR Tartan Arrow CCT	£1.65
LNER breakdown crane	£5.00

WRENN OO

RI 0-6-0 SR, LMS, BR	£9.65
A4 4-6-2 BR, LNER	£26.95
City 4-6-2, LMS-BR	£27.75
W/C 4-6-2, BR only	£27.75
BR Class 20, blue-green	£16.35
BR 8F 2-8-0 also LMS	£26.95

Also in stock at good prices: Hornby, Jouef, Graham Farish, Peco, Wills, KS Kits, Cotswold, Ratio, Slaters, Millholme, Merit, Dart Castings, Springside Models, Langley, Wandt Kits, Evans Lamps, PC Transfers, Brian Sherriff Townscenes, Tiny Signs, Cooper Craft, Ian Kirk, Gloy Paints, D. Bradford Barton Railway Books, The Best Nameplates by LEW. All at:

RAIL FAYRE, 19 Alexandria Road, West Ealing, London W13

Open 10.30 to 6 p.m., Mon., Tues., Thur., Fri., Sat. Lunch 1.30 to 2.30 p.m. Postage extra. Locos 75p each, Coach 30p each, Wagons 15p each. **Special Offer to callers only on Modelstrip and Matchbox Yesteryears at only £1.75 each.**

TAKE A TRIP BY TRAIN TO

E.N. CARLESS LTD

234 NANTWICH ROAD, CREWE

JUST A SHORT WALK FROM THE STATION

Large selections of Hornby, Mainline, Lima, Airfix, Wrenn, Grafar, etc. in stock.

Accessories and Spares available.
Repairs undertaken. Personal service and advice.
Plus Mail Order.
Reductions for Cash Sales.

PHONE NOW! **CREWE 213036**

ECOS

DEPT. MT1080
22 BRITANNIA ROAD
PARKSTONE
POOLE, DORSET
BH14 8BB
Tel. (0202) 741316

CONTINENTAL MODEL RAILWAYS IN 'Z', 'N', 'HO', 'I' AND 'G' GAUGES

CATALOGUES ARE A MUST WHEN PLANNING A LAYOUT

WE HAVE THE FOLLOWING AVAILABLE POST FREE:

ARNOLD — 'N' complete system. New '80/1	**65p**	CAT. ☐	PRICE LIST ☐
BEMO — HOe/HOM. Narrow Gauge 1979/80	**70p**	CAT. ☐	PRICE LIST ☐
BRAWA — HO/N Signals, Lights etc. 1980	**70p**	CAT. ☐	PRICE LIST ☐
BUSCH — HO/N/Z Scenic Access, etc. New '81	**65p**	CAT. ☐	PRICE LIST ☐
FALLER — HO/N/Z Buildings etc. New '80	**80p**	CAT. ☐	PRICE LIST ☐
FLEISCHMANN — HO/N Locos etc. New '81	**80p**	CAT. ☐	PRICE LIST ☐
HAMO/MARKLIN — HO Locos. New '81	**SAE**	CAT. ☐	PRICE LIST ☐
HELJAN — HO/N Buildings etc. Current	**55p**	CAT. ☐	PRICE LIST ☐
H.M.B. — 'G' Gauge & 'I' Buildings	**30p**	CAT. ☐	PRICE LIST ☐
GOGTRAM — 'HO' Trams. New '80/81	**35p**	CAT. ☐	PRICE LIST ☐
KIBRI — HO/N/Z Buildings etc. New '81	**75p**	CAT. ☐	PRICE LIST ☐
L.G.B. — 'G' Gauge Garden System	**£1.30**	CAT. ☐	PRICE LIST ☐
LILIPUT — HO/HOe Locos etc.	**£1.40**	CAT. ☐	PRICE LIST ☐
MARKLIN — I/HO/Z complete. New '80/81	**£1.00**	CAT. ☐	PRICE LIST ☐
MARKLIN MINI CLUB — 'Z' Gauge. New '81	**SAE**	CAT. ☐	PRICE LIST ☐
MINITRIX — 'N' Gauge Locos etc. Current '81	**70p**	CAT. ☐	PRICE LIST ☐
PECO — OO/O/N/009 Track etc. Current	**85p**	CAT. ☐	PRICE LIST ☐
SOMMERFELDT — Catenary, German text	**80p**	CAT. ☐	PRICE LIST ☐
SOMMERFELDT — Guide with translation	**£1.50**	CAT. ☐	PRICE LIST ☐
ROSKOPF — HO Military Vehicles	**20p**	CAT. ☐	PRICE LIST ☐
SCHNEIDER — Z/N/HO/LGB Lights etc.	**20p**	CAT. ☐	PRICE LIST ☐
VOLLMER — HO/N Buildings etc. New '80/81	**80p**	CAT. ☐	PRICE LIST ☐
WIKING — HO/N Road Vehicles	**SAE**	CAT. ☐	PRICE LIST ☐

ALL ABOVE CURRENT EDITIONS — PRICE LISTS FREE, BUT PLEASE SEND LARGE SAE WHEN ORDERING PRICE LISTS ONLY

TICK THOSE REQUIRED, CUT OUT ADVERTISEMENT AND SEND TO US WITH P.O.s, CHEQUE OR CREDIT CARD NUMBER AND NAME AND ADDRESS, AND WE WILL DESPATCH BY RETURN OF POST OR SEND US YOUR ORDER, ON A SEPARATE SHEET OF PAPER IF PREFERRED.

How we made the Westport Branch

Build this OO gauge layout with Michael Andress. Part 4: The harbour

This month we look at the main scenic feature of the Westport Branch layout, the harbour. Because this will be the focal point of the scenery we should make every effort to create as realistic an effect as possible. In addition this month we will colour and texture the adjacent scenic work.

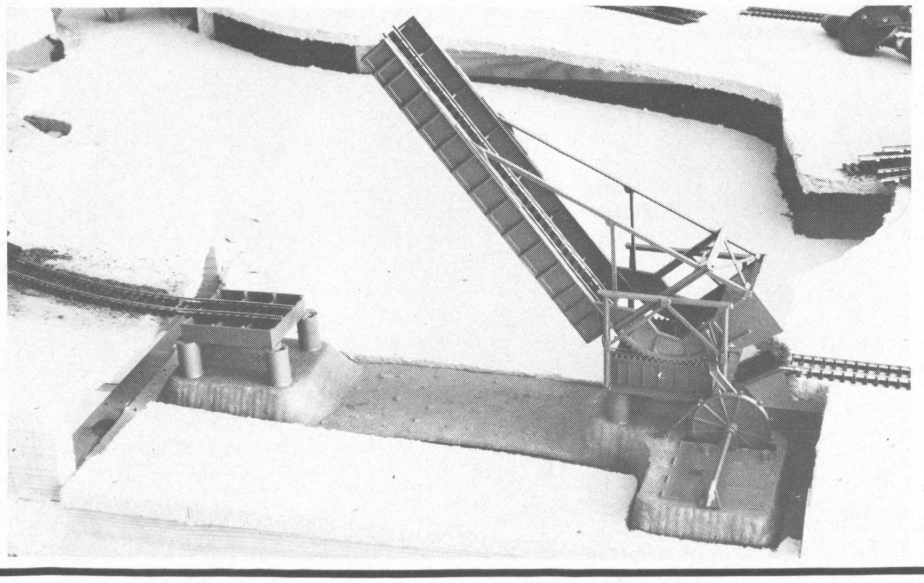
There are various ways of modelling water, and many of these will give realistic results if carried out carefully. I chose to use clear casting plastic to represent the water on this layout. This technique seems to have originated in the United States but it is now becoming popular in other countries too. It is a relatively simple method but can give very realistic results.

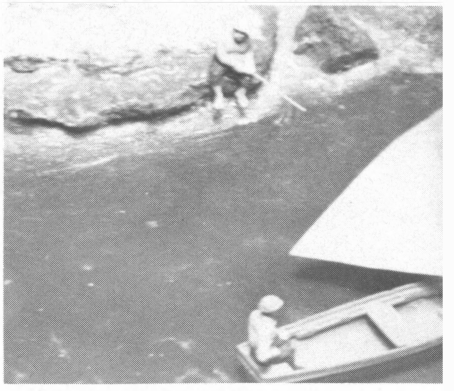
The casting plastic is supplied as two components; liquid plastic and hardener. I used Plasticraft made by Turner Research Limited of Leeds and sold by toy shops. A similar material is made by Isopon of Hemel Hempstead, Herts, and this is also widely available. Before we can use the plastic we must prepare the harbour bed. As previously described pieces of newspaper dipped into plaster were used to form the banks between the upper and lower layers of insulation board. Mod-Roc is more expensive but even easier to work with. I made the banks fairly steep except where the beach area is to be and here the slope should be more gentle. I also coated the whole of the harbour bed with a thin layer of plaster smoothed out fairly well, filling in the gaps around the base of the lifting bridge and bringing the level of the base up to the harbour bed level with plaster at the same time. At either side of the lift bridge on the beach side of the layout I decided to model rocky areas. To do this I collected a variety of suitably shaped and sized small pieces of real rock. These pieces were moved around on the layout until I achieved the sort of appearance I had in mind. Temporarily removing the rocks I applied more plaster to the area then set the rocks into the wet plaster. Extra plaster was used to fill in the spaces between the rocks and between the rocks and the banks. The whole harbour area was then left to dry thoroughly before colouring.

The next stage is to colour the bed, blending the colours with deeper blue-greens where the water is to appear deep, merging into browns and even yellow in the shallows. The casting plastic may dissolve some acetate base paints but I use emulsion paint or poster colours for scenery and these will not be affected. Poster paints are convenient to use and are easily available. Matt emulsion paint of the type used for interior decorating is even better as it covers well and tends to seal and protect the plaster surface of the scenery. It is also very cheap. If you buy a few basic colours in the smallest size of tin, these can be varied by adding powder poster colours to obtain just the tones you want.

It is worth noting that the plastic makes the colours of the bed beneath it look deeper and darker; the colour the paint is when wet rather than after it has dried, so do not make the harbour bed too dark. Remember also that with real water outdoors the apparent colour is considerably influenced by reflections of the sky making it appear lighter, whereas this will not occur with modelled water indoors. Even though the surface of the plastic will realistically reflect the surroundings these are likely to be darker than the sky. I emphasise this point because I did get rather caught out myself and ended up with a darker effect than I really wanted!

The harbour at an early stage in construction showing the two levels of insulation board and the placement of the lifting bridge.





The rocky area beside the lifting bridge after applying the plastic 'water' and adding details. The sailing dinghy was made from a lifeboat from a ship kit.

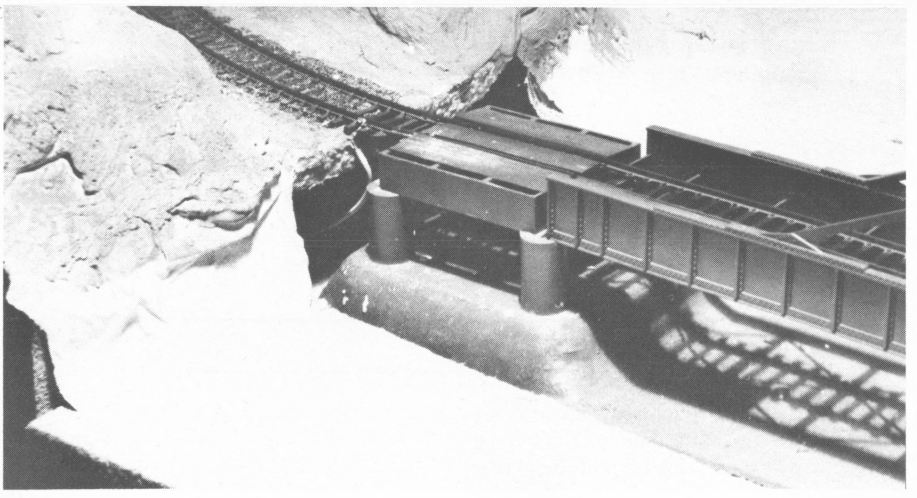
At this time you can also paint the scenery at the beach side of the layout and all the banks as well as the harbour bed, using appropriate colours. Generally greys for rocky areas, browns for soil and yellowy-greens where there is to be grass. After the paint has dried white glue or clear office gum is painted on the grassy areas and fine scatter material or flock powder is sprinkled on. For the beaches I painted the plaster yellow and when dry applied white glue followed by a sprinkling of real beach sand. The piles for the small jetty at the beach and for the larger jetty at the dock were cut from dowelling of suitable diameter, stained dark brown, and then glued into holes made in the harbour bed. A dock wall made from scribed balsa sheet with beams of strip balsa at intervals was fitted on to the bank in the appropriate place.

At this stage any items to be wholly or partly submerged, for example pieces of driftwood, old tyres, oil drums, reeds, and so on can be fixed in place. Ships or boats can also be fixed down but more variety is possible by using waterline models and merely placing them on top of the finished water surface as they can then be moved around or removed altogether as desired. I decided on this latter course. Unpainted plastic will be attacked by the liquid casting plastic so take care that any plastic item which will be exposed to the liquid has been painted beforehand, including the bridges.

We are now almost ready to mix and apply the plastic. However, because the water areas on the layout are not totally enclosed by scenery but extend to the edges of the base board where the river and the sea are, the liquid plastic would pour out from these places not only wasting most of the plastic but making an awful mess on the floor as well! To prevent this happening we must temporarily seal these openings off

with pieces of card or thin wood glued in place to contain the plastic until it sets. When the 'water' is completed and has been allowed time to set really hard these pieces can be stripped off and the revealed edges of the plastic smoothed with a file and sandpaper; painting these edges black gives a neat finish.

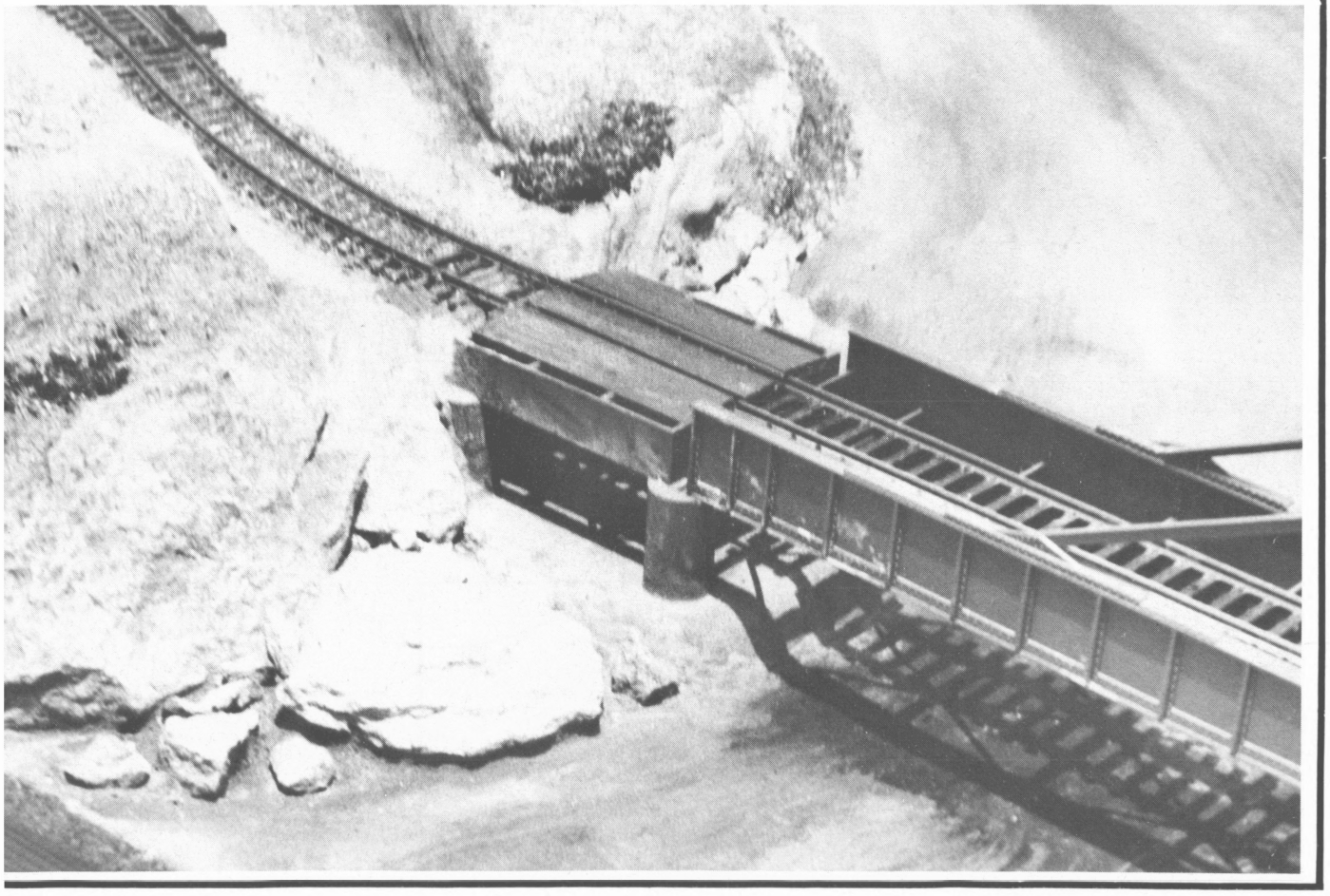
When forming the 'water' it is not advisable to try to apply one thick coat of the plastic as this may result in cracking or in a concave top surface with an unsatisfactory appearance. Thin layers will give better results. I used three layers on this layout but you can employ even more if you wish. The liquid plastic for the first layer should be mixed according to the instructions provided with the material and then poured on to the harbour bed. It will spread out and level off but I had to use an old paint brush to get it right out to the edges and into the corners around the rocks and the jetty pilings. It is important to have the layout *perfectly level* when pouring the plastic as otherwise the water surface on the finished model may slope giving an unrealistic effect! Use a spirit level to check this before you begin, chocking up the baseboard if necessary. After the first coat has been allowed to dry thoroughly a second layer, again mixed according to the manufacturer's instructions, should be applied and allowed to harden. Setting can be speeded up by placing the layout somewhere warm. Colouring materials are available and can be added to this second layer if desired. Blue, green or brown dyes are suitable and give a good effect but only a trace should be used to give a fairly subtle colouring. They are not essential by any means as the painting of the base should be sufficient for a realistic appearance, and I did not use them for my harbour.



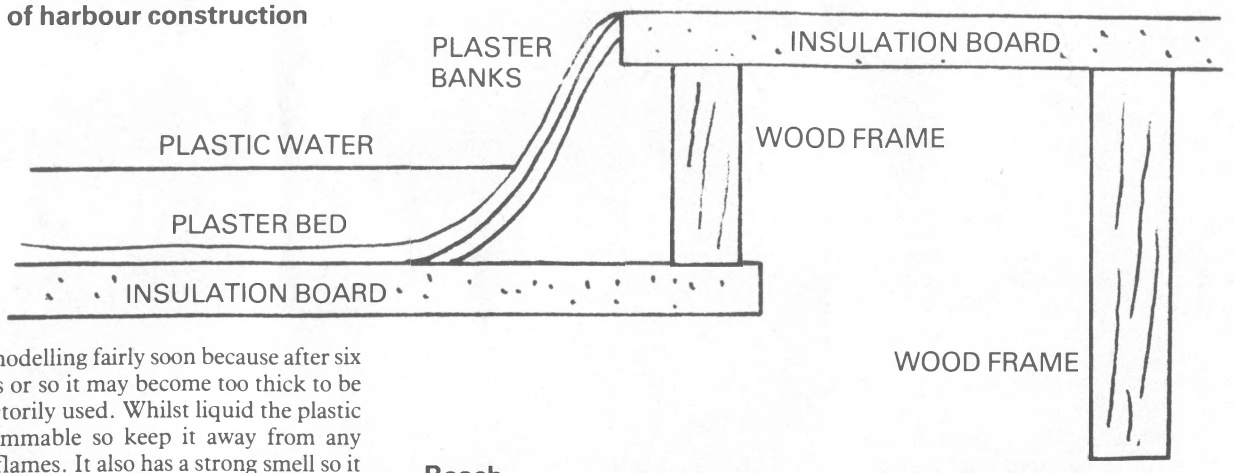
Here the banks have been roughly modelled except close to the bridge and some colouring has been carried out.

Before the third layer is added a little white paint is used to give the appearance of foam or froth around rocks and pilings; alternatively this can be left until the third and final coat is applied. For this final layer much more hardener should be added (approximately ten times the normal amount) and the layer should be applied fairly quickly as it tends to set more rapidly with the excess hardener. The faster setting which occurs results in rippling of the surface giving a very realistic representation of water with its surface disturbed by small waves due to wind and currents. The plastic has a tendency to creep slightly up the banks, pilings and rocks due to capillary action while still liquid. This does not really matter as there is often a damp strip just above the water level due to tides or to splashing from waves or wind. However, if you prefer, this strip can be touched up using matt paint or with glue followed by a little scenic dressing. If you have some of the liquid plastic left over try to use it up for

The same area ready for the application of the first layer of the casting plastic. The pieces of rock have been blended into the plaster scenery and the banks and harbour bed have been coloured.

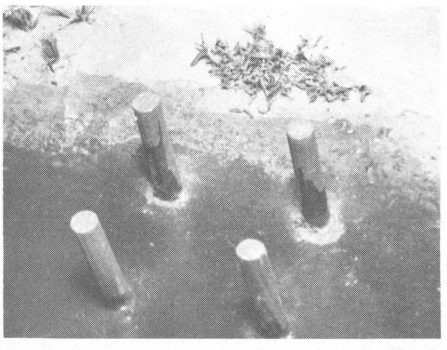


General arrangement of harbour construction



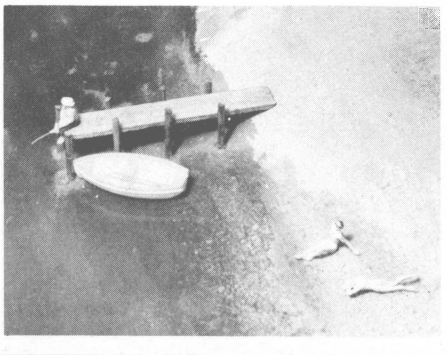
other modelling fairly soon because after six months or so it may become too thick to be satisfactorily used. Whilst liquid the plastic is inflammable so keep it away from any naked flames. It also has a strong smell so it is best applied and allowed to harden in a room with good ventilation, preferably well away from the rest of the family! This is a very realistic method of modelling water and though the plastic is fairly expensive the total cost is not excessive because only a relatively thin covering of the plastic is required to give an excellent impression of either deep or shallow water.

The jetties are completed by adding decks cut from balsa sheet, scribed to represent planking and stained. Bathers and fishermen on the beach and jetty are Preiser figures while this firm also makes a set of rowing boats. The small sailing dinghy is a lifeboat from a plastic ship model kit with a mast of plastic rod and sails of paper. The dock area will be covered in detail later.

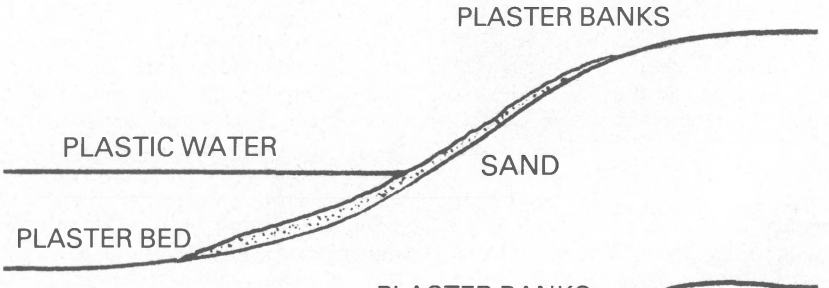


Pilings for the large jetty are ¼ inch dowel. Deck of jetty has not yet been fitted, but foliage growing underneath is in position.

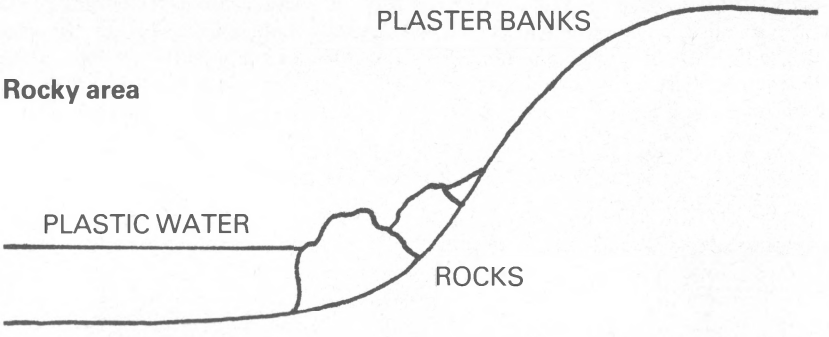
The small jetty complete with fisherman (Preiser). Bathers on the beach and the rowing boat are also Preiser products.



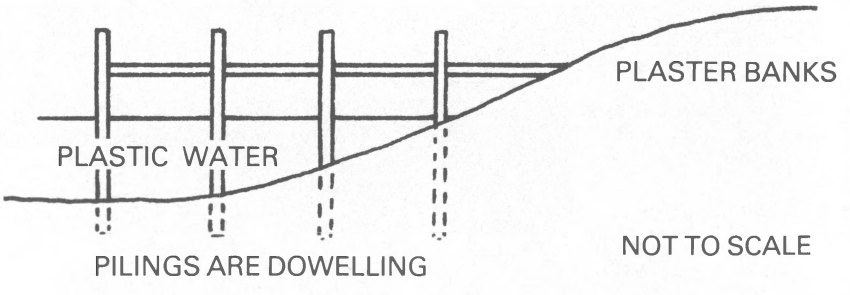
Beach



Rocky area

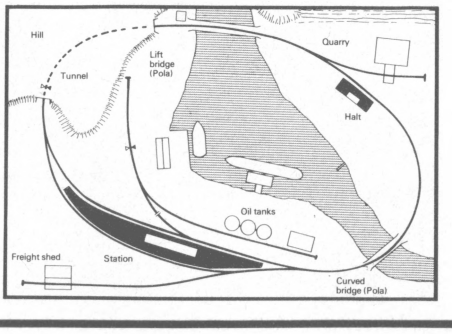


Jetty construction

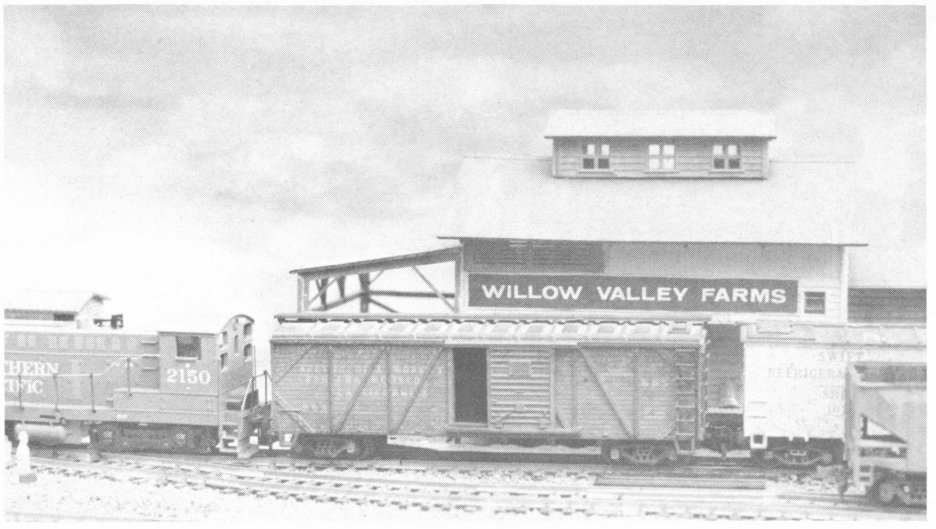


PILINGS ARE DOWELLING

NOT TO SCALE



Previous instalments appeared in the October, November, and December 1980 issues. Track-plan is reproduced here, for quick reference scale ½ inch to 1 ft for H0/00.



An elderly diesel type like the Athearn Baldwin S-12 can provide typical short line motive power, and the line might serve small local industries like the Willow Valley Farms farmers' co-operative which sends daily shipments of produce to city markets and food processors. Here a box car and a reefer are pushed into the loading bay siding for loading. The structure conversion was featured in the July 1980 issue.

Short Line Diesels

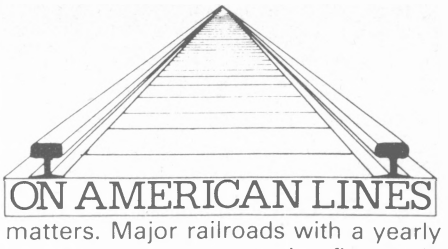
....or modelling a short line in the modern era.... the attractions of the idea are considered by Chris Ellis.

In Britain it is convenient and usual to talk of the 'steam age' and the 'diesel age' for the change-over from one to the other took only a few years. Elsewhere the transition was much more gentle, and in USA and Canada the diesels took over in a fairly steady way over a period of 30 years or so. But a big company could take a long time to effect the change-over. For example ATSF (Sante Fe) had their first diesels for switching and passenger service in the 1930s, and their first diesel freight locos in 1941, but they did not say goodbye to steam locomotives until the late 1950s.

Dividing the subject of short lines into 'steam' and 'diesel' is therefore not a clear cut matter, for there is still steam traction in revenue-earning service in the United States at this very moment. So perhaps it is best to think in 'modern' terms rather than 'diesel' terms as you can happily mix steam and diesel in modern day short line layouts with plenty of full-size precedent to follow. And, in addition, you'll still find some electric traction, mostly of vintage variety, plus gas-electric (ie, petrol-electric) for good measure. The previous short line article (May 1980 issue) dealt with steam traction, though it will get mentioned again in passing.

For the moment, however, let us recall that I said a short line was the nearest thing you'll get to a full-size train set — maybe one locomotive, a few freight vehicles, and a little bit of track, and that's the entire set-up! So from the modelling point of view you do not have to think of your layout as some tiny imaginary part of a bigger company — BR, GWR, LMS, DB, ATSF, or what you will. Instead, what you possess *is* the company stock and you are the owner or manager — the boss of the line.

But getting back to basics, what exactly is a 'short line'? Actually it is the popular name for a small railway operation in America, but such a line is not necessarily 'short' in trackage terms. It may be an actual branch line less than two miles long, but it could equally well be a quite extensive cross-country route over 200 miles long operating several branch lines on the way. The legal definition is to do with revenue, not length or size of the operating department. The Interstate Commerce Commission is the government body which regulates such

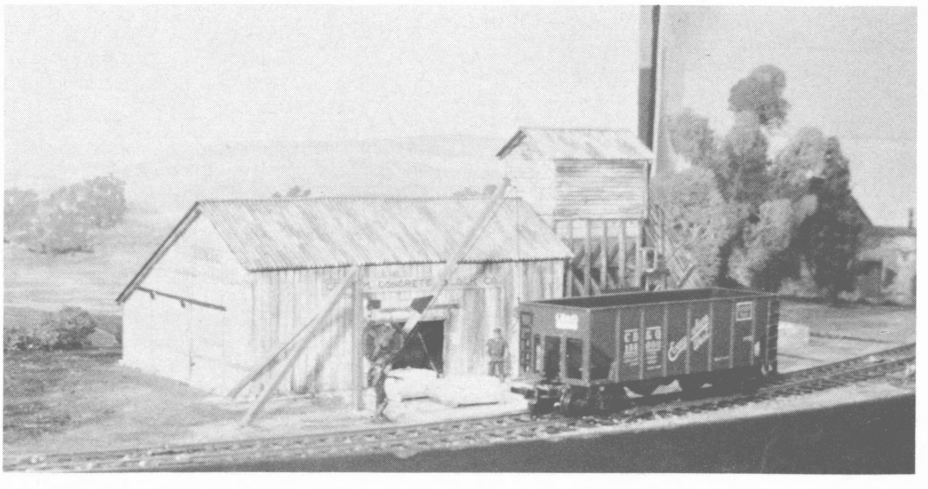


matters. Major railroads with a yearly revenue over a certain figure (it increases with inflation) are categorised as Class 1. Those below this figure are Class 2. Years ago there was a Class 3 too which took in lines of the smallest type. Class 2 and 3 were merged into Class 2 only in the late 1950s, but now there is a proposal to re-create Class 3 for roads with a revenue of under $10 million a year. Until then, what are popularly called short lines are actually Class 2 railroads in legal terms. So think of short lines as short of revenue rather than miles.

Within Class 2 (or 3) there are ICC classes indicating annual revenue, from Class A ($50,000 or less) to Class G (over $3 million). The Class 2 (or 3) roads in 'common carrier' business are further categorised as 'Line Haul' roads (with reporting marks allocated for freight stock — if any) and 'Switching and Terminal' roads. Line haulers are conventional operators charging freight rates on what they carry, while switching and terminal roads offer (and charge) a service to Class 1 roads usually in industrial or city areas.

In other words they collect and deliver freight cars over yards and industry trackage on behalf of the big railroads in the area. There are at least six such switching and terminal short lines in the densely trafficked Chicago area, but there are others in varying numbers around nearly all major conurbations, such as the South Brooklyn Railway Co in the heart of New York, and the San Francisco Belt Railroad. These sort of companies own switching (shunting) locomotives and sometimes have the odd transfer caboose, but they don't usually own their own freight cars since they exist to handle those of

Bert Lamkin's main model railway activity is an 00 gauge layout round the walls of his attic depicting the complete St Ives branch of the GWR in the 1930s. However, in a spare corner he also runs a short line in HO scale as a more light-hearted diversion. This spur serves a concrete block making plant, a typical industry that a short line might have. Stucture is scratch-built.



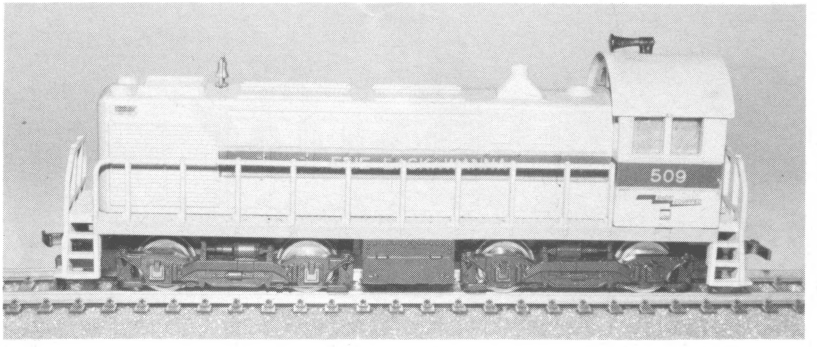
the big companies.

In the last four years, in fact, short lines have actually become a growth industry and new companies have been formed in some numbers. This happened when the Consolidated Rail Corporation (Conrail) was formed in 1976 to take over and rationalise the several big bankrupt Class 1 railroads in the north east (Penn-Central, Central of New Jersey, Reading, Lehigh Valley, etc, etc). Lots of branches or duplicated routes were abandoned by Conrail and the relevant act allowed local business interests to take over abandoned lines (and not only in the north east) with a short term subsidy to help them on their way. This led to the appearance of a third ICC category, the 'Designated Operator' line. New names were registered and small companies were formed, big on enthusiasm if not on capital. A classic in this category is the Crab Orchard and Egyptian Railroad which took over an abandoned Illinois Central branch at Marion, Illinois, and promptly started operating in October 1977 with two steam locomotives as the entire motive power for the line. Even before the Conrail act, however, this sort of take-over was going on. For example the Wolfeboro Railroad Co took over an abandoned Boston & Maine branch in 1973 and now runs both passenger and freight service with a vintage GE diesel switcher, a 1928 Brill gas-electric railcar (now sold), and a 1926 vintage Baldwin 2-6-2 steam loco.

Added to all this activity has been the emergence of new short line freight stock. Because freight car numbers were declining nationally (due to non-replacement of stock) the ICC offered an incentive scheme which made it financially most attractive (with tax concessions) to lease and operate more cars. So short lines who may never have owned cars before suddenly started leasing, adding over 10,000 cars to the national total. Some of the model manufacturers in USA have recognised this by adding models in new short line liveries to their HO model ranges.

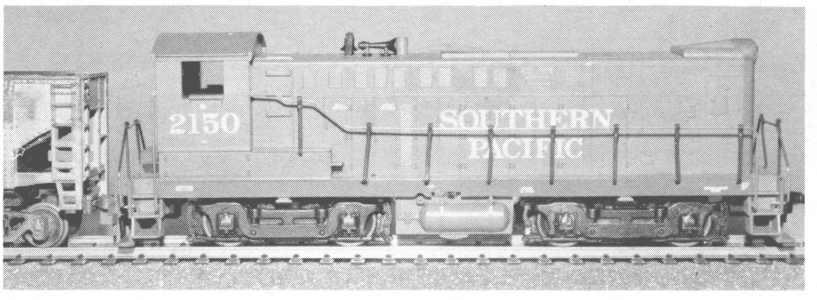
This takes us full circle back to the short line modelling idea, and for the enthusiast seeking a gentle and interesting approach to the model hobby, a modern short line has a lot to offer. For a start there is Simplicity with a capital S. Short lines are owned by individuals, some major railroads, or business interests, all of them private enterprises in a tight economy. They don't operate just for the fun of playing trains or giving their employees an easy living. Everything is kept as simple as possible — no elaborate track formations, no fencing, no imposing office blocks or the staff to fill them, no superfluous train staff, and no big servicing terminals. Turn-outs are invariably hand-thrown and the only signal in sight may be that protecting the main line interchange. Safety is not

Diesels for a Short Line

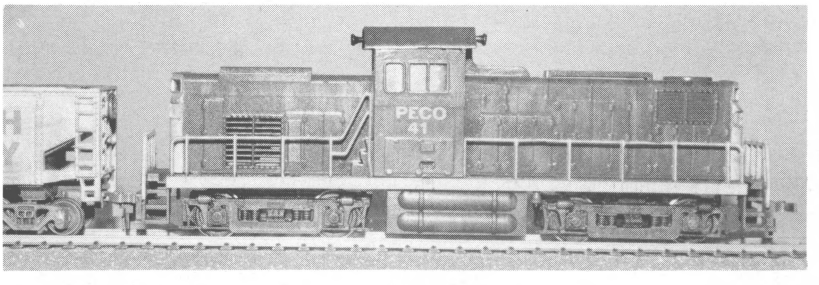


If you want to start a modern era short line layout, you won't need much stock — just a single locomotive and about six freight cars will get you going. Of the many suitable locomotive models in HO here are three very typical short line types which we commend.

Alco S-2: Between 1940 and 1967 Alco built their S series switchers, and of these the most numerous was the 1000hp S-2, around 1,500 being built in the 1940-50 period. A surprising number survive, and many are still used by short lines (and indeed big Class 1 roads). Mehanotehnika of Jugoslavia make this very accurate replica which is sold under the AHM label and depicts the 1943-44 production period, so is a 'vintage' diesel by any standards. Model takes tight radius curves with ease (even 10 inch at a pinch). It has four-wheel drive and an excellent performance. Eastern Models are the UK importers, and it is stocked by most UK shops which sell American models. Contact Eastern Models for name of your nearest stockist. Model is shown as sold, though it comes in a choice of several road names.



Baldwin S-12: Baldwin built this final type of switcher in the 1951-56 period before it went out of the locomotive business. There were 800hp and 1000hp models with similar bodies. About 450 S-12s were built and quite a number survive with short lines and industrial users. It was a popular, rugged, design, well captured in this Athearn model which can be had in several road names or in plain undecorated form. For short line use the SP version shown is a good choice as a lot of old SP locomotives went to short lines (and SP own or part-own some short lines). When a second-hand loco goes to a short line the old road name is often just painted out and the short line name is painted over the patch. Model takes sharp curves but as the coupler is fixed to the chassis 14-15 inch radius curves will be the minimum for hauling cars without derailing. Victors, and Kings Cross Models are among British Athearn stockists.



Alco C-415: This was a 'new generation' design of switcher in Alco's 'Century' series of the mid-1960s, intended to replace the S series. It was an interesting and attractive 1500hp type, but only 26 were built in the 1966-68 period before Alco went out of business. Rock Island, Southern Pacific, and SPS (later BN) were major roads who has C-415s and the Mehanotechnika eight-wheel drive model (sold as Life-like in USA) is available in all these finishes, plus some bogus ones (eg. Santa Fe and Penn-Central). Columbia & Cowlitz and Chehalis Western are two short lines actually using this type, plus some industrial lines. As so few C-415s were built, the type is more familiar in model form than in real life. More may turn up on short lines via the second-hand market. Our model was in bogus ATSF finish, so we repainted it as a Peco leased machine, spraying the body in Humbrol Emerald Green, and painting the ends and railings in Signal Yellow — the colours Peco use on second-hand locos they acquire and refurbish. We have seen no evidence of Peco ever handling C-415s (not surprising as there are so few of them) but our finish shows what they might look like. Note that the body weight was painted matt black as it fits inside the cab. We used yellow Blick BOE 59 lettering — style could be either P.E.CO. or PECO. On larger locos (such as the GP-18) the top halves of the hoods are usually painted yellow, rest green, with the name PRECISION in full in green on the yellow portion of the long hood. There is no particular number system, and the loco usually repeats all or part of the original owner's number. The Peco finish could, of course, be applied to almost any US diesel model as the company handles all types and leases to lines big and small all over the USA.

disregarded, however, as you will be aware if you've ever seen an American train creeping over an unprotected road crossing, air-horn at full blast, and flagman holding up road traffic, for tough insurance rates and penalties discourage any ideas of irresponsible management.

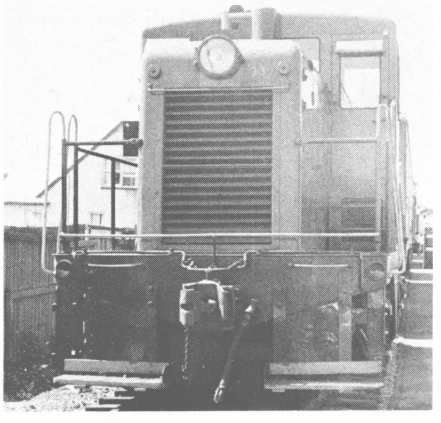
With simplicity is allied Economy. So except for certain short lines operating in major industries, most motive power is elderly and second or third hand, and the bare minimum for operating requirements. For example the Walla Walla Valley RR has used an old single SW-1 EMD switcher built 1939, even though it is a wholly-owned subsidiary of the big Burlington Northern. So even a rich owner isn't going to spend money on unnecessary replacements all the while existing power is doing an adequate job. Obviously for the penny-pinching railway modelling enthusiast this sort of thing is good news — if you can afford only one of two model locos you are being strictly protypical on a short line layout. On the other hand if you want to splash out there is also a short line precedent, for such lines as McCloud River and the Apache Railway have fleets of high horsepower locos in their capacity as modern western logging' lines. Several lines have at least one modern type (such as a GP-40 or GP-35) as the biggest of, say, three locomotives if the work requires this sort of power. More typical, however, are 1950s vintage small diesel locos such as Baldwin S-12s, EMD switchers of various types, Alco S-2 switchers, or Alco RS-2s or RS-3s. Even more common are various General Electric 44 ton and 70 ton types. These GE types are not available in ready-to-run form at the time of writing (except in brass occasionally), though the others mentioned are mostly readily available in HO.

Essential to the whole operation is Revenue. Though quite a few short lines run steam-hauled passenger services in summer (which a model layout can also do), most lines are really in the freight business, which takes priority over all else. There are exceptions, notably the Strasburg Railroad which makes 99% of its revenue from intensive passenger hauling in a popular tourist area in Pennsylvania. The typical line haul short line, however, makes its money by acting as a carrier for local industry and the busier the local industry the more prosperous the company. When industry dies the short line goes with it. This happened late in 1979 to the Wellsville, Addison, and Galeton Railroad in Pennsylvania. When the factories it served all closed down, WAG had no sources of revenue so it had no option but to close.

Hence the ideal short line model layout must have factories and industries to serve, and the more you can pack in (without over-doing it) the more your line can justify itself. The rider to all this is that lots of industries served by spurs and sidings give you a lot of switching (shunting) to do, and this can make even the smallest layout very interesting and absorbing to build and operate. The Edgmoor & Manetta layout in the May 1980 issue is a classic real short line of great simplicity yet enormous in its operating potential. Also the Warren layout which we ran in the Jan-Sept 1980 issues can be used as a short line with no less than seven local industries to serve. In this context, incidentally, let me add that Class 1 railroads also have conventional branches which are physically similar to line haul short lines, operate often in a similar way and differ really in their method of corporate financing and establishment, so if you want to model a Santa Fe or Burlington Northern branch you can class them with short lines from the modelling point of view.

Now on top of all this there is a 'prototype for anything' rule for short lines. Whatever you think of, the chances are that a short line has done it

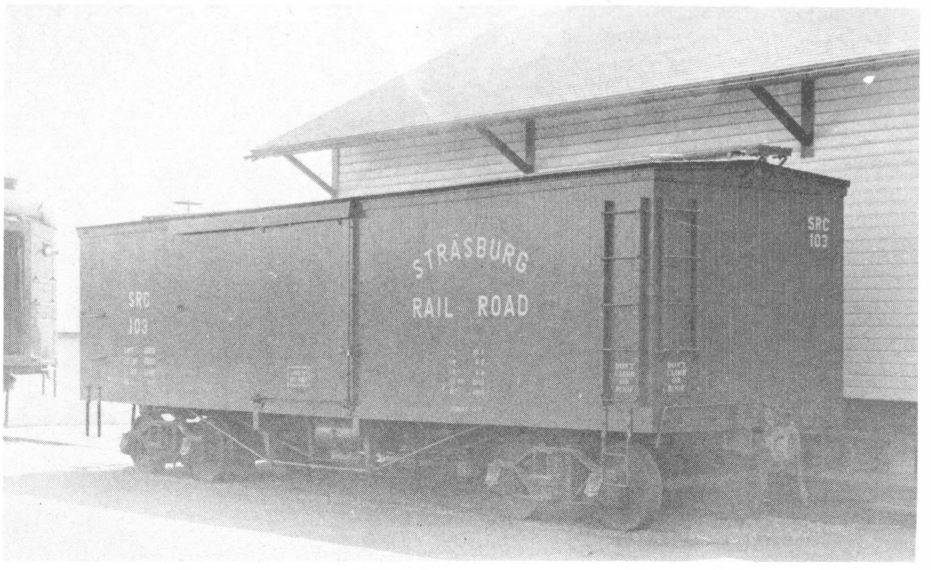
Even the mighty ATSF (Santa Fe) and other Class 1 roads have branch lines which are like short lines in appearance and operation. This F7 is picking up box cars and creeping through overgrown track at Alma, Kansas, on the Alma-Burlingame branch, which was closed in 1973. This branch was itself originally a short line, the Manhattan, Alma, and Burlingame RR, owned jointly by ATSF and SP. Picture dates from 1968 and is reproduced by kind permission of McMillan Publications from their book Route of the Warbonnets, *which gives a fine coverage of ATSF in the diesel era, including their branch lines.*



Above: *Classic short line motive power is the General Electric centre-cab 44 tonner which is scarce, however, in model form, though some brass examples have been made over the years. This one belongs to the Strasburg Rail Road.* **Below**: *The South Toms River branch of the Central of New Jersey RR (now Conrail) also has a short line appearance. This is the brick freight house at South Toms River, with rickety wood platform, where local farm produce, among other things, is loaded on occasional box cars.*

already. Some random examples will suffice to illustrate this. You have model locomotives, for instance, painted in the liveries of big Class 1 roads; you don't feel up to repainting them in your short line livery. Fine, because big names are common enough on short lines. Many short lines are wholly or partly owned by Class 1 roads who supply a locomotive to work the line so it continues to carry the name and number of the owning Class 1 road. So don't feel guilty about running a Southern Pacific switcher, say, on a short line layout. It happens in real life. Even if the short line is privately owned you may see the same thing happening, because the owner may lease a loco from another line. Then again, if you can't even decide what to call your short line, you could paint your loco(s) in the livery of a locomotive leasing company. What about Peco whose name was commonly seen on American railroads? Peco? Yes, that's Precision Engineering Co who buy up and refurbish old diesel locomotives, then lease them out to anyone who needs motive power. In green and yellow finish, they carried the Peco name and number of the side, not that of the operating company. Peco is now Precision National (PNCo), however. As far as stock is concerned, anything goes. All current rolling stock is to be seen in its colourful modern finish (it looks particularly good with steam locos, by the way, if you fancy a Crab Orchard & Egyptian style layout) and models are available in the newer short line liveries too, though Class 1 names are more common. The caboose is getting quite rare on short lines, but on the other hand trains can be ridiculously short. Just a single box car constituting a train is by no means uncommon. Though long trains are seen on short lines, six or so vehicles would be very typical and some lines would consider this heavy traffic!

The great thing about a modern short line, aside from all its colour, compactness, and simplicity, is that it allows very legitimate freelancing because the real thing is a freelance operation in big time terms. There are hundreds of little short lines in USA (and Canada too in lesser number), most with quaint enough names which sound rather like the names modellers give layouts. You can dream up your little short line operation, do your own thing, and be safe in the knowledge that you are following full-size precedent. Just work out where you interchange (that's the fiddle yard on your layout) and away you go. On the west coast there is the Great Western Railway — so if you dreamed up the Great Eastern Railway as a mythical short line set in, say, New Jersey, don't be too surprised if somebody soon starts a real short line with this name — and I've had to look it up to make sure they haven't already done so! So a short line can be paradise for a free-



SRC is the reporting mark of Strasburg Rail Road, whose elderly wood box car is suitably adorned as it stands at the Strasburg freight house. This is actually a museum piece from earlier in the century, but short lines now often have their own modern box cars, mostly leased, to supplement the cars that work 'through' from Class 1 roads.

lance operation—you invent your community and the railroad to serve it, making it as busy as you like.

If you want to get the flavour of what short lining looks like, then the key reference is *American Short Line Railway Guide* which gives current details of them all with lots of pictures to provide a good impression. When available you can get it in England from Victors, though at the time of writing it is out of stock — *Model Trains* readers bought all the remaining copies from Victors after we reviewed it last year, but watch for the next edition. The US publisher is The Baggage Car, PO Box 733, Morrisville, Vermont 05661, USA.

Model motive power? Once again, anything goes, because even old 'covered wagons' (EMD F-7s or F-9s) get used on short lines, even if they have to run awkwardly back to front. In 0 gauge you can use the Plymouth switcher and the EMD F-9 from Atlas as a perfect pair for short line work. I do just that on a temporary line of 0 gauge sectional track which runs down my garden path on sunny week-ends. Just half a dozen Atlas and Rivarossi box cars and gondolas keep us busy. In HO the selection is rich, and the various Life-like AHM, Mehanotehnika and Model Power locomotives are among the cheapest you can get. For N scale there is less of a selection of smaller power, but certainly enough to get you going, and if all else fails try the excellent Bachmann F-9 which is readily available. For steam try the Bachmann 2-8-0 or USRA 0-6-0, or the Rivarossi Baldwin 0-6-0T saddle tank, compact types as favoured for modern steam operation, and all available in HO. For HO diesel operation, the models particularly commended are: Athearn: Baldwin S-12, EMD F-7A, EMD SW-1500 (actually a SW-900). Mehanotehnika: EMD F-9, EMD GP-18, Alco S-2, Alco RS-2, Alco RS-11, Alco C-415, EMD BL-2 (also sold variously under the AHM, Life-like, and Model Power names). Bachmann: EMD FT, EMD F-9, EMD GP-40, EMD GP-30. Life-like: GP-38-2, EMD F-7. In Britain you can get most of these (though not necessarily all of them) from the usual stockists of American models, including Victors, Keiths, Kings Cross Models, Meks, and M.G. Sharp. Avoid all HO Plymouths which are all wrongly scaled—though Plymouths are used by quite a few short lines.

Plan your own short line

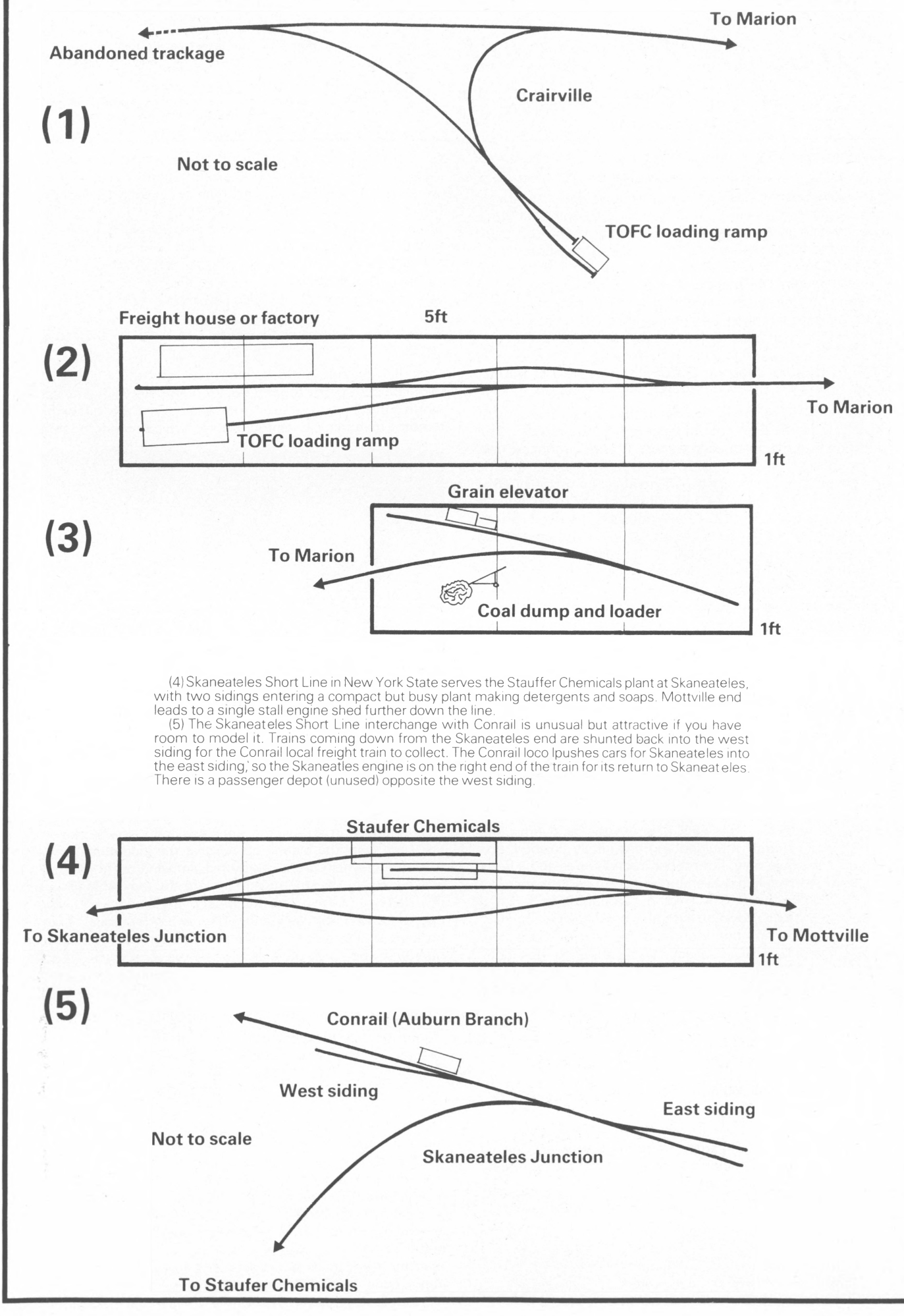
Most short lines have relatively simple track plans. All have some sort of interchange with a main line system, a typical interchange layout being shown with the Edgmoor & Manetta track plan (May 1980 issue).

Modellers with limited space or financial means should find a short line easy enough to reproduce as it is possible to build compact modules in easy stages. The Edgmoor & Manetta plan showed minimum space corner treatment. Any of the modules shown opposite could be tacked on to the E & M layout to extend it further, but they could be variously joined between themselves to give short line set-ups with plenty of operating potential.

(1) West end of the Crab Orchard & Egyptian RR features a turning triangle (the track to the west on this old ICG branch having been lifted). The southern leg of the triangle leads to the line's major source of revenue, a siding with loading ramp for a 'piggyback' TOFC operation owned by Southern Illinois Piggyback Co. As many as three short trains a day of TOFC cars (trailer on flat car: TOFC) are sent to the junction with Missouri-Pacific RR at Marion at the eastern end of the line. The adjacent track is used to load goods sent by van from US Prison Industries (products made at a nearby prison).

(2) Here is a suggested adaptation of the idea with a run-around loop replacing the turning triangle, and a freight house or factory replacing the US Prison Industries siding.

(3) East end of the Crab Orchard & Egyptian RR features a kick-back spur to a grain elevator and a coal dump and loader for reclaimed coal from a local slag heap. There is a run-around loop further west at the Mo-Pac interchange.



(4) Skaneateles Short Line in New York State serves the Stauffer Chemicals plant at Skaneateles, with two sidings entering a compact but busy plant making detergents and soaps. Mottville end leads to a single stall engine shed further down the line.

(5) The Skaneateles Short Line interchange with Conrail is unusual but attractive if you have room to model it. Trains coming down from the Skaneateles end are shunted back into the west siding for the Conrail local freight train to collect. The Conrail loco lpushes cars for Skaneateles into the east siding,' so the Skaneatles engine is on the right end of the train for its return to Skaneateles. There is a passenger depot (unused) opposite the west siding.

Shopwindow
NEW KITS AND MODELS.

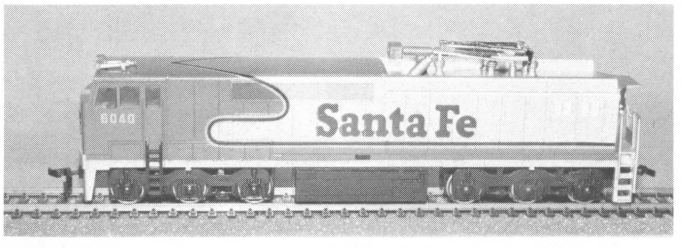
New items of interest to railway modellers are reviewed by the editorial staff or contributors and opinions expressed are theirs, not necessarily the views of the publishers. While every effort is made to give latest catalogue or recommended retail prices, prices quoted should be taken as a guide only due to variations in discounts, exchange rates, taxes, and postal rates. Most items are generally on sale in usual outlets, but addresses of suppliers are given where there is only limited availability.

Langley: B1 Class 4-6-0, 1:148 scale/N gauge, UK £8.25

The enterprising firm of Langley Miniatures, 166 Three Bridges Road, Crawley, Sussex, has produced many useful kits for British prototype N gauge modellers. This is a kit of sharply cast white metal parts which gives a body and tender for the Thompson LNER B1, designed to fit the readily available chassis of the Grafar LMS Black 5. The B1 was the LNER equivalent to the Black 5, though it is not so well-known. Obviously any LNER modeller will find this to his liking and the finished model looks good. The parts fit well and you can't really go wrong as body and tender are single castings with only buffing gear and cab floor as separate pieces.

Bachmann: General Electric E60CF, 1:87 scale/HO gauge, UK £9.90

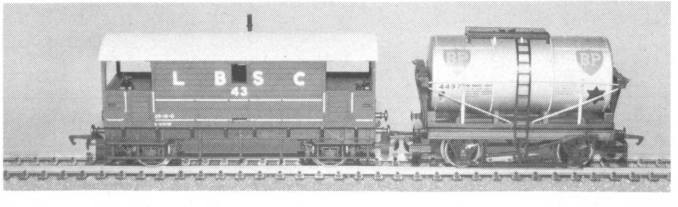
Electric traction in USA is much less widespread than in most other countries, due to the high cost of electrifying long routes. Most electrification is in the north-east. General Electric produced 'new generation' designs in the early 1970s to replace earlier electric power. The E60CF is a single-ended freight loco for 50kv 60hz electrification built in the 1972-76 period. Only six were actually produced for the Black Mesa and Lake Powell Railroad on mineral haulage duties in the Arizona desert. A longer double-ended version (cab at both ends), the E60CP, was built and sold in small numbers for Amtrak. While these locos look extremely rugged and neat, they suffered from speed restrictions and other performance limitations despite their big power output of 5000-6000hp. Future electric loco production is likely to be dominated by EMD's rival design, their version of the Swedish ASEA loco.



Bachmann's model of the E60CF is a very handsome and accurate likeness, sharply moulded and beautifully finished. It is powered on one bogie only, but rubber traction tyres and a hefty weight give it good hauling power and a smooth performance like previous Bachmann locos. The folding pantograph is a plated plastic dummy, with no provision for actual overhead pick-up. Our sample is finished in the good-looking ATSF passenger 'warbonnet' red/yellow/silver scheme. Looks super on the model, but if ATSF actually had this type it would no doubt be in the blue/yellow freight livery. The other option is the Chessie System finish, equally bogus. Verdict: a fine model at a modest price, but if you are a stickler for accuracy you'll want to repaint it as a Black Mesa loco, the true colours for this type. Our sample model was courtesy of Victors, UK importers.

Hornby: Shell /BP Tank Wagon/LBSC Brake Van, 1:76 scale/ OO gauge, UK £2.30/£2.85

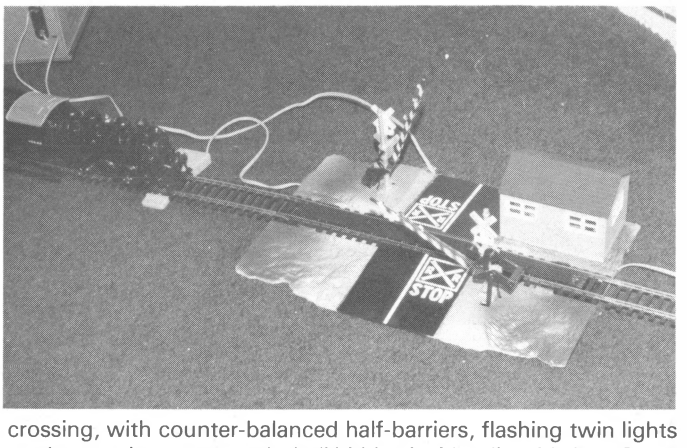
Latest rolling stock from Hornby, these are up to the latest rolling stock standards from this company, running well and neatly finished and detailed. We couldn't track down an actual prototype



for the tanker, but the detail and finish is very convincing and it looks authentic enough. It is shorter than most tankers, but there certainly were tankers of this general type making a nice contrast to vehicles with longer chassis. The LBSC brake van is very pleasingly finished and looks good. Southern fans should welcome it and it would be worth a repaint to SR finish – if Hornby don't do it themselves. As we recall, some of these 1922 period vehicles were still to be seen in early BR days as well. From pictures it looks to be a very accurate model, though we have no drawing to check.

Bachmann: Rail-road Crossing Set, 1:87 scale/HO gauge, UK £5.50

Operating gimmicks are nothing new, and this Bachmann item might be considered too toy-like for many. However, it is certainly worth consideration as an effortless addition to a layout with lots of remote features. It reproduces a typical modern American

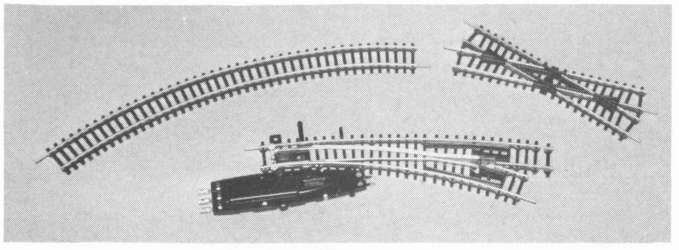


crossing, with counter-balanced half-barriers, flashing twin lights on the warning posts, and a bell hidden inside a lineside hut. Small pressure plates are placed under the track each side of the barrier and the weight of an approaching train rings the bell, flashes the lights, and brings the barriers crashing down, all in very short order just like the real thing – in USA there are no long waits at barriers, it all happens in an instant when the train is very close to the crossing. Only the blaring air horn of the locomotive is missing from the mayhem produced by this amusing outfit. Also missing and necessary for strict accuracy, are the inevitable relay boxes near the foot of the posts, and most barriers now are in white and dayglo stripes, not black and white as on the model. This set is unlike British level crossing barriers both in style and in mode of operation, but it is quite like some we've seen in France and Germany, though the signs would need altering in both cases. Our sample was lent for test by Victors who hold stocks.

Berliner-Bahnen: Trackage system, TT gauge, prices in text

Until now only the Berliner-Bahnen TT locos, rolling stock, and accessories have been available in Great Britain, but now the importers, Eastern Models, have the track system available through the TT Dept, 91 Otley Drive, Gants Hill, Ilford, Essex. A limited quantity is available at first, but if demand is there, then the whole range will be freely available. Gem track has been the norm for most TT modellers in Britain (unless using hand-laid track, of course) but a few modellers have managed to get hold of the Berliner-Bahnen track and have reported favourably on it in recent months. The track differs from most other current sectional track in that it is made of hollow section tinplate rather like the old Hornby O gauge track. It differs, however, in having a plastic sleeper base with scale spacing. It is of finer cross-section than the Gem track, and fractionally lower. We would put it at about code 75. Rail joiners of conventional type are not used. Instead there is a plug type of insert which fits inside the hollow

of the adjacent track section. The track section has quite a slender look compared to Gem (or indeed the old Triang TT track) and when rail colour is added, except to the top surface, it takes on quite a fine scale look. The turn-outs are also unconventional, following the old Hornby tinplate style again. This makes the switch rails and frog look quite crude and toy-like, but when track colour is used to cover the tinplate areas at the frog and switch, the turn-out is transformed in appearance. The track geometry is based on a large radius circle of 660mm diameter and a small radius circle of 572mm diameter, with eight full track sections to the circle. UK price is 23p per track section. A full length (228mm long) straight is also this price, and a half-straight is 18p. A straight turn-out is £2.52 and a long curved turn-out (a new release) is £2.88. These turn-outs are hand-switched as supplied but come with a motor attached in a flat housing which may be screwed on to a tie-bar on either side to suit your site. Wires



taken to tags provided, and thence to a switch button and 16V AC power supply, give instant conversion to a powered unit. This is a neat idea for it allows for later installation of remote control if you are working to a tight budget. A cross-over with conventional dead frog arrangement costs £1.83. A full list of units and prices can be had from the address given. Complete overhead catenary to match this track is also available. Send a SAE with your enquiry.

We tried a number of Berliner-Bahnen locos through the track and turn-out samples we received, and we were favourably impressed with results. The Berliner locos are excellent, in any case, but in combination with the track system they seemed fairly fool-proof. We were unable to contrive any sort of stalling on turn-outs or cross-over, however slowly we crawled the locos. We could also reverse the loco at slow speed as it passed over the frog. The only adverse comment we can really make is that wheel flanges drop into the gap at the frog, causing a slight lurch which is ugly. This apart we give full marks to the system which seems robust, of good overall appearance, and giving dependable contact.

Formashape: Vac-form Buildings, OO/HO scale, 54p each plus VAT

BMW Models Ltd, 327-329 Haydons Road, London SW19, produce an interesting and novel range of scale building sets which have the great advantage in this day of high prices of being quite cheap – cheaper than many card kits even. Formashape takes its ideas from the vac-form model aircraft hobby. All the parts from a building are moulded by vacuum in 20 thou plastic card (white) and what you buy is a large sheet of walls, roofs, and other pieces all ready to cut out. Once they are cut from the sheet (with craft knife or scissors) everything is ready to be cemented together as in a plastic assembly kit. Surface texture actually surpasses some plastic kits for detail, since things like crooked tiles are included. Several of the models are replicas of actual buildings, for example, terraced houses from Wimbledon Park, a pub from Wandsworth, Liskeard village hall, and a barn from Dogwalls, also in Cornwall. The farm is from Sussex, and set of outbuildings from a farm at Sutton, Surrey. In addition to these there is a set of pill-boxes from World War 2 (still to be seen, of course) and ruined houses. These latter two are intended for military dioramas but are still useful for model railway scenics. Without exception these are good looking, clean mouldings. We reckon the village hall could also be adapted to become a station building for OO or an engine shed for 009 or TT. The barn is a particularly nice looking piece and it could obviously be adapted to an industrial style of building or a warehouse as it has an upper storey loading door. In addition, it is obvious on examination that

TAYLOR & MC KENNA
TOY & HOBBY CENTRES
AYLESBURY • BANBURY • BLETCHLEY • HEMEL HEMPSTEAD
KETTERING • LUTON • MILTON KEYNES CITY • NORTHAMPTON • STAINES
TM
märklin mini-club
The layout illustrated is available in limited numbers while stocks last from our Central Milton Keynes branch for only £175.00 complete on baseboard. (The layout cannot be mailed, personal callers only please). EXCLUDING ENGINE AND ROLLING STOCK
STARTER KIT
Taylor & McKenna offer you this fabulous opportunity for starting your own miniature 'Z' gauge layout with transformer, engine, three freight wagons and track at nearly ½ price!
£38.50 VALUE
NOW ONLY
£31.50
INC. P+P + VAT
ONLY £175.00
Please allow 10 days for delivery
P.T.O.
I wish to pay by Barclaycard/Access, please charge to my account. My card number is:
(BLOCK LETTERS PLEASE)
NAME
ADDRESS
(Signature)
ORDER FORM POST TODAY TO:
36 Burners Lane, Kiln Farm, Milton Keynes MK11 3DB
100'S OF BARGAIN CHRISTMAS CASH SMASHERS
Send S.A.S.E. for Free list

much could be done with individual walls and roof sections to make low relief versions of all the buildings. The windows in each case are moulded solid but with all frame detail included. The modeller could, if he desired, cut away the solid sections and add glazing. Barn, farmhouse, and village hall also have quite a 'Norman' look about them and would be all right on a French style layout. If you have no local stockist, order direct from BMW, postage extra. A detailed assembly sheet comes with each sheet.

Roco: Slide-side Wagon/VTG Tanker, 1:160 scale/N gauge, UK £2.80/£2.98

Two recent Roco N gauge releases are exemplary examples of top quality production in this scale. Both have blackened wheels and very good couplings. Detail and finish is sharp throughout. The

slide-side van is a Swiss prototype quite commonly seen and mainly used for transport of crates, drinks and food — the side panels slide to give access for palletised loads, but they are dummy on the model, of course. Our sample is for Ovaltine (Ovamaltine in Europe), but other liveries are available including Migros, Feldschlosschen Beer, Warteck Beer Rivella, and SBB. The tanker is a standard VTG four-wheeler as currently seen and comes in several finishes including VTG itself, and Shell.

Our samples came from Riko of Hemel Hempstead, UK distributors of Roco trains, which are available from Roco stockists like Howes and Victors.

Liliput: WB 0-60T, 1:87 scale/HOe gauge, UK £19.29

This is not a new model, having been about for ten years or so. It is one of several narrow gauge models of Swiss and Austrian prototype made by Liliput, and specifically this is the famous *G. Thommen* of the Waldenburgerbahn, a line covered in our 'Basis for a Layout' series in the February 1980 issue (where you can read more and see a picture of the real locomotive). In that article we wrongly reported the model out of production. It is very much available, however, and it was good to have a chance to borrow it for test. It proved to be a very sweet little run, greatly helped by pick-ups on all wheels and a nicely engineered chassis. At first glance the all-plastic valve gear looks a bit hefty, but it is also very sturdy and we imagine that it will look a bit less prominent if it is darkened or dirtied by the purchaser. The motor occupies the lower part of the cab but does not show from the normal viewpoint. Crew figures could be added if cut off at the waist. Finish and quality of the moulding is excellent. This type of locomotive was used on several German/Austrian/Swiss NG lines and the model will be a useful purchase for anyone modelling a European line. It would take very little work, really just a repaint, to anglicise it for a British 009 line. Our sample was loaned by Victors, 166 Pentonville Road, London N1, who holds stocks of the entire range. Included in the range are the appropriate coaches for the WB.

Bachmann: Plymouth 0-6-0 Switcher, 1:160 scale/N gauge, UK £5.40

We reviewed the HO version of this model last year and all the remarks we made then apply equally to this N gauge model. In summary, it is a superb runner and a bargain at the price. It looks like a Plymouth industrial switcher and the finish is actually better than on the HO version. However, it is grossly over-scale for a locomotive of this type – about 33% too big, being built out to the American loading gauge limits so that it stands as high on a normal size locomotive. Also the finish is bogus – ATSF never used this sort of locomotive. Thus a stickler for realism would not be too satisfied with this model, unless it was regarded as a rather unlikely freelance design. However, it is just the thing for a HOe or HO2½ narrow gauge layout. Either the chassis could be used for a new body, or a new cab could be made from plastic card to

TAYLOR & MC KENNA
TOY & HOBBY CENTRES
AYLESBURY • BANBURY • BLETCHLEY • HEMEL HEMPSTEAD
KETTERING • LUTON • MILTON KEYNES CITY • NORTHAMPTON • STAINES
NEW
HORNBY ADVANCED PASSENGER TRAIN SET
INTRODUCTORY OFFER
£59.95
INCLUDING V.A.T. + P&P.
HORNBY RAILWAYS
The Advanced Passenger Train in its futuristic livery is British Rails latest step forward in rapid Inter-City travel. The unique tilting bodies provide stable and comfortable travel for both BR and Hornby passengers. The articulated coaches and long wheel base bogies are all accurately modelled and the diecast bogies on the power car ensure optimum performance from the Ringfield motor. The driving trailers also have lights which operate in the direction of travel. The 5 car unit is well over 4 feet long and is supplied with a very large oval of track to allow for maximum speeds.
Overseas post & packing rates on request. All packets sent surface mail unless otherwise requested
Please allow 10 days for delivery
QTY DESCRIPTION £ p
P & P
TOTAL
Fill in the order form enclosing a cheque or P.O. made out to TAYLOR & McKENNA LTD. P.T.O. and fill in your address!
ORDER FORM
POST TODAY TO:
36 Burners Lane, Kiln Farm, Milton Keynes MK11 3DB

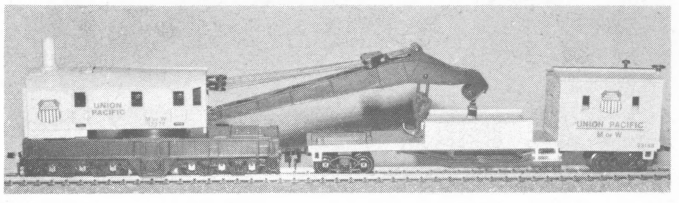
correct HO proportion. Mechanically it is a very fine model. Our sample came from Victors who stock the Bachmann range.

Bachmann: Tri-Level Car Transporter, 1:87 scale/HO gauge, UK £3.15

If you want to see modern freight rolling stock at its most spectacular, some of the current American specialist vehicles are worth a glance. This giant tri-level car carrier holds 15 US-size motor cars and comes with a complete set of them. Trans-continental deliveries can be made from the mid-west to the west coast, and long trains of these car carriers are an impressive sight. This Bachmann model scales out exactly, and is unusual for these days in being die-cast which gives good weight and rigidity – a plastic model over a foot long, would undoubtedly warp or sag. Only the ends are plastic. An unloading dock for the cars would make an interesting addition to a modern era layout, though the sheer length of the model really makes it unsuitable for a very small layout. The model rolls well and dwarfs all other freight rolling stock except equally long hy-cube box cars.

Bachmann: 250 ton Crane Car & Boom Tender, 1:87 scale/HO gauge, UK £4.50

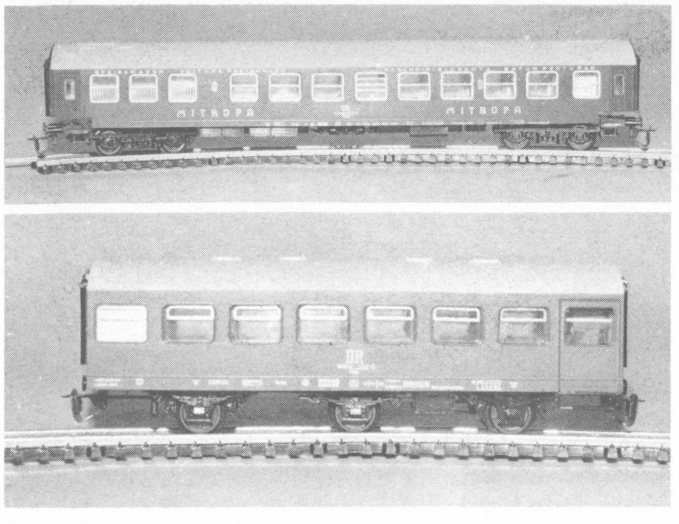
This is another long piece of equipment, a complete wreck unit consisting of a heavy steam crane and its attendant boom car. The crane is an authentic replica and looks most impressive. It slews and hoists, using plastic keys which insert through side windows.



The detail is sharp and includes dummy jacks at each corner. The boom car is a typical made-up job from a cut-down box car, with added tool boxes and a pile of dummy wood chocks. The unit is painted in Union Pacific colours but an Amtrak version is listed – which sounds unlikely. The model lends itself to a fair amount of freelance conversion to suit your layout. The crane looks very like many seen in Great Britain, and a BR type unit would certainly be possible if the boom tender was replaced by match trucks. Our sample came from Bachmann importers, Victors, 166 Pentonville Road, London N1.

Berliner-Bahnen: Mitrope Speisewagen/Reko Coach, 1:120 scale/TT gauge, UK £3.25/£2.75

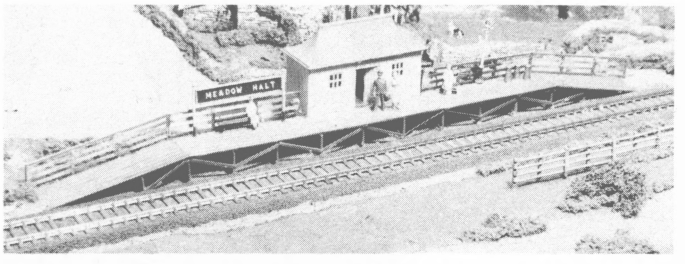
These are two interesting coaches from the Berliner-Bahnen TT range. The Mitropa vehicle is a good replica from a whole range of standard Deutsche Reichsbahn classes. Designated WRm, it is a



dining car complete with internal detail, flush windows with plated surrounds, and excellent markings, including all the small solebar stencilling. The Reko coach is a modern six-wheeler used for commuter and local traffic and with no real equivalent in West Germany. it is of contemporary outline and style with dummy sliding doors in each side. The centre axle is cleverly arranged to move sideways when negotiating tight curves. It can also be removed completely, if desired, to depict the four-wheel version of the coach mostly used on branch lines. In standard DR green, our sample had lettering which was less sharp than usual, but this may just be unique to the model we had. With very smooth running wheels, blackened and of reasonably fine standards, these are two handy pieces for TT collectors.

John Day: GWR Halt, 1:76 scale, UK £3.18

This plastic kit for a typical GWR Halt Station with pagoda type corrugated iron shelter and wooden platform should prove popular with modellers. The parts are neatly moulded in appropriately coloured plastic, platform parts dark brown, shelter walls buff and shelter roof black, so painting is not essential. The only instructions provided are in the form of line drawings on the card header but construction is straightforward. The one-piece moulding for the shelter roof avoids any difficulties with this part



of the assembly. The model captures the atmosphere of the prototype very well and will make a most attractive addition to a branch line layout as can be seen from the accompanying photograph showing the kit as constructed by Terry Jenkins for a layout he is building. Terry used a nameboard he already had instead of the kit board and he has also added a seat, a lamp, figures and milk churns which are not in the kit. We can recommend this realistic and authentic kit.

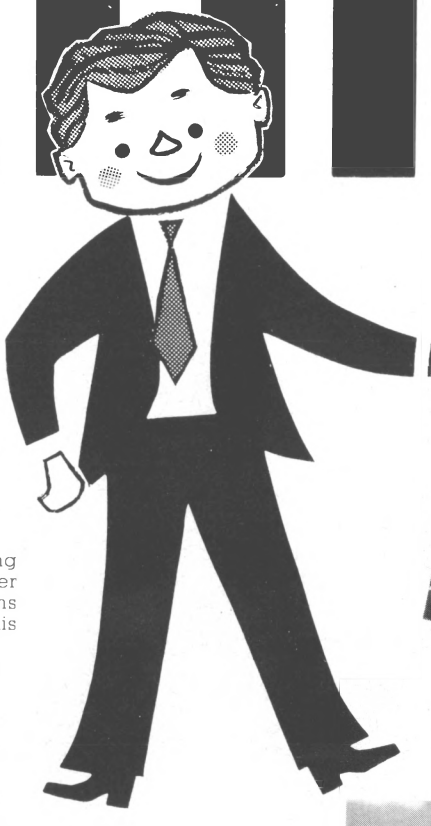
Ratio: LNWR Underframe Kit, 1:76 scale/OO gauge, UK 62p

If ready-to-run wagons with slightly non-authentic underframes worry your conscience, then you can thank firms like Ratio who make the underframes from their scale kits available separately for those who want to use them to fit other bodies or scratch-build new bodies for themselves. Here we have the standard LNWR 9ft wheelbase wood underframe, complete except for wheels and couplings. You add these to suit your system. The kit is designed for EM or Scalefour adaptation as well as standard OO and compensation fittings can be incorporated to suit if required. Springs, axle boxes, and brake equipment are all separate, putting the completed model into the super-detail class. The kit is sharply moulded and makes up like any other plastic kit. It is a good model in its own right and suggests to us the idea of modelling a wagon repair works to give an excuse for using some of these kits as they come. Ratio also offer the underframes separately from most of their other wagon kits. If you have no local stockist try Ratio direct at Sturminster Newton, Dorset.

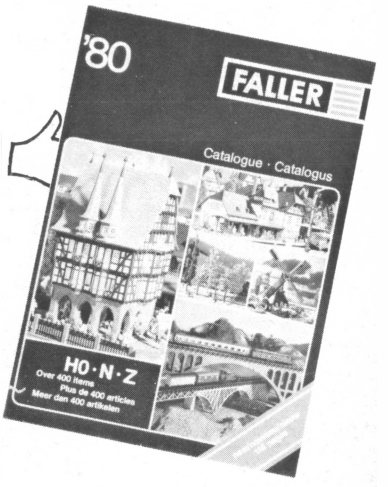
Roco: Eurofirma Coach, 1:87 scale/HO gauge, UK £5.65

The Eurofirma coach is a standardised type for cross-operating in Europe being built for the railway companies of Belgium, France, West Germany, Austria, Italy, and Switzerland. Only the colour schemes will be different. Our sample is the DB 1st class version, but Roco also produce it in French and Austrian colours and Swiss and Italian are promised. The model is right up to the best Roco standards with flush framed windows and all internal and external detail. Finish is exemplary. A very nice feature is the clever coupling arrangement which gives commendably close coupling in the straight but has a spring and a generous swing for getting round curves. This is with the standard Marklin-type coupler, not the special Roco close coupler. The model comes with a sheet of extra markings including alternative destination boards, plus a set of brake pipes for adding to the buffer beam. Our sample was supplied by Howes of Oxford who stock the entire Roco range.

BEATTIES



make your layout come alive with FALLER



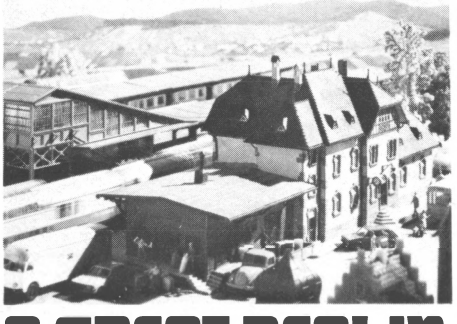
Have you ever noticed that although the Railway Modeller is often dazzled by the choice of model locos and rolling stock available, the end result is usually the same.

A model landscape true to life, with the railway itself providing the movement. This in itself is certainly fun, and for the modeller with a slightly more complex layout with perhaps 2 or 3 trains operating, shunting and station facilities—he has probably got his hands full . . . just operating it!

But what about that scenery? Why shouldn't there be movement there too—perhaps unsupervised!

This is where FALLER can assist. You know that FALLER make one of the biggest ranges in model buildings, churches, bridges, stations, tunnels, trees, fences, houses etc etc. You know that FALLER also make lighting kits to illuminate the buildings for night travel. But do you know about the fully working gravel works for automatic loading and unloading—or perhaps that church on the hill that could really have its bell ringing—or the water mill with turning wheels? This is not all. We even have fountains that really work and sawmills and windmills that actually turn! For modern image what about the **fully** working motorail terminal with roadways and lorries!

This has given you an idea of what we mean by movement but don't stop there—in our catalogue you will find all sorts of electrical gadgetry to motorise your own ideas—like delay switches, transformers, minipumps and slow-revving motors.



So do yourself and your layout a good turn today—visit your local branch of BEATTIES and buy your copy of the FALLER catalogue. While you are there talk to the staff about FALLER working models.

They'll be only too pleased to help—after all they are real modellers just like you.

FALLER

Also available—the FALLER publication 'Scenic Modelling made easy'—cram packed full of tips and ideas for just £2.00

A GREAT DEAL IN STORE FOR YOU

BEATTIES

Licensed Credit Brokers

Europe's leading model and hobby shops

CENTRAL LONDON: 112, High Holborn, WC1V 6JS. 01-405 6285/8592
SOUTH-EAST LONDON: 210, Lewisham High Street, SE13 6JP. 01-852 0449
*__NORTH LONDON:__ 10, The Broadway, Southgate, N14 6PN. 01-886 4258
NORTH LONDON: 104/106 High Road, Wood Green, N22 6HE. 01-888 0937
BIRMINGHAM: 26, South Mall, B'ham Shopping Centre, B2 4XD. 021-643 8604
BLACKPOOL: 19, Houndshill Centre, Victoria Street, FY1 4HU. 0253-26461
BRISTOL: 17/19, Penn Street, BS1 3AW. 0272-20259
ESSEX: 7/11, High Street, Romford, RM1 1JU. 0708-24283
HERTS: 70, The Parade, High Street, Watford, WD1 2AW. 0923-27563
KINGSTON-UPON-THAMES: 30/32, Eden Street, KT1 1EP. 01-549 5464
LIVERPOOL: 36/37, Dawson Way, St John's Centre, LI1 1J. 051-709 0799
LEEDS: 16/18 King Charles Street, LS1 6LT. 0532-456611
MANCHESTER: 4/6, Brown St. off Market St. M2 1EE. 061-834 7780
NEWCASTLE: 43/47, Pilgrim Street, NE1 6QE. 0632-24161
NOTTINGHAM: 3, Mount Street, NG1 6JW. 0602-411693
SHEFFIELD: 38, Pinstone Street, S1 2HN. 0742-77864
SOUTHAMPTON: 114, East Street, SO1 1HD. 0703-24843

Mail Orders to Southgate branch

Clubs and Societies

Redruth Model Railway Club has a new secretary, David Brown, The Nook, Richards Lane, Illogan, Redruth, Telephone Redruth 214545. Club meets every Friday, 7.30pm at Tangye Institute, 1 Broad Lane, Illogan, Redruth.

Ickenham and District SME meets every Friday at 8pm in its clubhouse behind the Coach & Horses public house, Ickenham, catering for both railway modellers and model engineers. More details by SAE to D. Sexton, 14 Orchard Close, Ruislip, Middx, HA4 7LS.

Rickmansworth and District Model Railway Society now meets on Tuesday and Thursday evenings from 7.00pm to approximately 10.30pm at their permanent clubrooms situated in the Rickmansworth Cricket & Sports Club, Park Road, Rickmansworth, Herts. Following some structural alterations, a larger area has been made available for a permanent club layout, construction of which is now under way.

New members are always welcome. For further information contact the Hon Secretary, John A. Page, 36 Frankland Road, Croxley Green, Rickmansworth, Herts. Tel: Rickmansworth 74034.

Southern Railways Group will be publishing a new club magazine *Coulsdon Cuttings* to replace *Nonsuch Notebook* which was edited by the late Denys Fletcher. New editor will be Richard Whitbread, 14 Deepfield Way, Coulsdon Woods, Coulsdon, Surrey CR3 2SY. Subscription (from this address) is £2.50 for six issues.

St Johns (Mickleover) Model Railway Group has a new Honorary Secretary, S.A. Ward, 11 Cookham Close, Mickleover, Derby.

Southern Electric Group preserves a 4-Cor EMU and studies SR electric traction. Meetings are held on the third Wednesday of each month in the Committee Room, Friends Meeting House, Park Lane, Croydon, Surrey, at 7.15pm (visitors welcomed). Details of membership, and books and slides available, from J.F. Chapter, 38 Reddons Road, Beckenham, Kent, BR3 1LZ (send a SAE).

East Grinstead Model Railway Club has just been formed, and weekly meetings are held at East Court Mansion, East Grinstead. For details of times and dates, please contact the secretary, D. Barker, 41 Hackenden Close, East Grinstead, Sussex.

Tunbridge Wells Model Railway Club has a new secretary, C. Turley, 9 St David's Road, Tunbridge Wells, Kent, TN4 9JQ.

Redworth Model Railway Club has recently been formed. Meetings are held on a Wednesday from 7.00pm at Kiora Hall Youth and Community Centre, Roseworth Road, Roseworth Estate, Stockton, Cleveland. New members and visitors are welcome to attend.

The 7mm Narrow Gauge Association was formed at the beginning of 1980 to cater for modellers of narrow gauge railways working in 7mm, ¼ inch, and similar scales. A members' journal *Narrow Lines* is published six times a year. Annual subscription £6.00. Further details from G.A. Thorne, 62 Langley Road, Staines, Middlesex.

Deutsche Bundesbahn are running a four-day trip to the 1981 Nurnberg Toy Fair, Feb 7-12, all first-class by rail and sea. Cost will be about £120. SAE for full details to Jo-Anne Brampton, DB, 10 Old Bond St, London W1.

KEITHS

MODEL CENTRE, 34 TOWER CENTRE, HODDESDON HERTS EN11 8UD. Phone 09924-60000

R. ROSSI

133 TEE/F.S. MEDIOLANUM. E444-027
Elec loco + 4 red and cream passenger cars £55.00
135 Italia Express, E444 elec + 3 FS and a DB passenger car £55.00
136 Italian 'Omnibus', 2-6-0 GR625 loco and 6 freight cars £53.00
143 'R95' 1937 Milano-Venezia, 4-6-2 GR691 loco + 3 FS and a CIWL diner passenger car £92.00
145 Italian Lakes goods train, 0-6-0T FNM loco and 4 freight cars £33.00
149 'Simplon Orient Express', 2-6-2 GR685 loco + 1 FS and 3 CIWL cars £112.00
302 'Windbergbahn Bug' meyer loco and 4 DR 4 wheel coaches £50.00
310 'La Fleche D'or', Nord 4-6-2 and 4 CIWL passenger cars . £135.00
322 'Gambrinus' of the 60's, 4-6-2 DB BR01-196 loco + 4 passenger cars £79.00
415 TEEM 'merchandises', E428 FS elec + 6 freight cars £51.00
425 'Bandiera Vesuvio', E656 FS loco + 4 grand comfit coaches £62.00
426 Italian 'Completo', E428 FS loco and 8 freight cars £60.00
433 'EXP 643', 1970 Milano-Roma, E646 elec FS loco, silver CIWL sleeper and 3 MU CIWL passenger cars £64.00
604 'Gambrinus', DB E18 elec loco and 4 modern German coaches £53.00
1773 TEE/FS 'Ligure', powered and dummy diesel railcars in red and cream £60.30
2552 4 coaches for 425 ..... £31.00
2553 4 coaches for 135 ..... £31.00
2936 4 coaches for 310 ..... £85.00
1118 4-6-2 FS GR691-022 ..... £43.40
1120 2-6-0 FS GR625 ..... £25.70
1121 2-8-0 FS GR740 ..... £34.50
1129 0-6-0T FNM GR270 ..... £22.00
1130 0-6-0 FS GR200 ..... £26.50
1131 0-6-0T FS GR835 ..... £17.50
1132 2-8-2 FS GR746-048 ..... £51.50
1133 2-6-0 FS GR623-iii with Franco-Crosti water heater ... £47.20
1134 4-6-2 FS GR691-023 ..... £51.50
1135 2-6-2 FS GR685-584 ..... £47.20
1143 2-8-2T FS GR940-034 ..... £42.50
1147 0-6-0T FS GR851-186 ..... £35.40
1337 4-6-2 Nord brown £51.50
1340 Mayer DR BR98-009 ..... £39.80
1344 0-6-0 Bourbonnais £27.40
1345/1 2-8-2 DB BR39-127 ..... £49.80
1346/1 2-8-2 DB BR39-149 ..... £49.80
1349 4-6-2 DB BR01-141 ..... £54.20
1446/1 E428 elec FS 3rd series . £33.60
1447/6 E646 elec FS 2nd series £33.60
1457 E646 elec FS 1st series ... £33.60
1458 E646 elec FS 2nd series .. £33.60
1459 E656-024 FS Caimano £33.60
1463 E636-381 FS 1st series £33.60
1464 E444-091 FS 2nd series ... £33.60
1665 E19-11 elec DB red £30.90
1666 E119-012-3 elec DB blue .. £30.90
1668 E17-121 elec DB green ... £30.90
1669 Durch B1100 elec blue £23.90
1670 Dutch 1100 elec grey and yellow £23.90
1671 SNCF BB8100 elec green . £23.90
1672 E118-028 elec DB turq/fawn £30.90
1673 E18 elec DB blue £30.90
1774 FS ALN668 railcar blue ... £22.00
1777 FS BoBo D341 diesel £17.00
1778 FS 0-6-0 D234 diesel £15.60
1779 FS BoBo D341-202 diesel . £17.00
1780 FS green diesel switcher .. £13.70
1996/2 DB V320001 diesel £28.30

HO NILAN TRAMS
6401 Tram and trailer + oval of roadway and overhead equip. 600 mm x 1000 mm ... £64.80
6402 tram + oval of roadway and overhead equip. 400 mm x 600 mm £41.60
6431 curved road section £2.60
6432 road with RN turnout £7.35
6434 road with 90° intersection . £6.25
6450 pair of poles and wire support 70p
6451 pole with current intake and curved wire and stay wire £2.60
6452 pole with stay and curved wire 90p

HO NORTH AMERICAN
212 Shenandoah Freight N&W 2-8-8-2 loco + 12 freight cars and oval of track £110.00
221 20th Century Ltd of 1938, streamlined 4-6-4 loco + 4 NYC Streamline passenger cars ... £67.00
224 Afternoon Express, 4-4-0 Genoa loco + 4 Virginia & Truckee old time passenger cars £41.00
229 Bonanza Freight 4-4-0 INYO loco + 6 old time freight cars £46.00
246 Timber Jack train, 2 truck Hiesler LC&NC loco and 4 log buggies £53.00
249 Blue Comet, 4-6-2 CNJ loco + 4 standard passenger cars . £66.00
260 20th Century Ltd of the 20's, 4-6-4 loco + 4 standard NYC Pullmans £67.00
274 Capitol Ltd, 4-6-2 loco and 4 standard passenger cars in dark green Baltimore & Ohio livery £73.00
289 Timberjack Train, 3 truck Hiesler LC&NC loco and 4 log buggies £59.00
809 Panama Ltd, powered + dummy E8 diesels and 4 streamline Illinois Central passenger cars £59.00
813 20th Century Ltd of the 50's, powered + dummy E8 diesels + 4 streamline NYC passenger cars £57.00
2628 4 coaches for 809 ..... £24.80
2677 4 coaches for UP262 and 248 ..... £22.00
2684 4 coaches for 249 ..... £22.00
2701 4 coaches for 260 and 813 £22.00
2713 4 coaches for Milw. Rd £22.00
1200 4-6-6-4 UP Challenger blk. £68.60
1206 4-4-0 Old Timer Santa Fe . £27.00
1207 4-4-0 Virginia & Truckee .. £27.00
1208 2-4-0 J. W. Bowker V&T ... £19.30
1211 4-4-0 Reno V&T £27.00
1212 4-4-0 Genoa V&T £27.00
1214 4-6-2 Milwaukee Road £44.50
1218 2-8-2 New York Central ... £45.40
1219 2 truck Hiesler LC&NCo ... £39.80
1220 4-6-2 Baltimore & Ohio £44.50
1221 0-4-0T Baltimore & Ohio .. £19.30
1230 2-8-2 Southern Railways .. £45.40
1244 2-8-4 Nickel Plate Road £45.40
1252 4-6-4 J3A New York Central £45.40
1253 4-6-6-4 UP 'Greyhound' ... £68.60
1254/2 4-8-8-4 UP Big Boy £70.30
1256 4-6-2 Central of New Jersey £44.50
1265 2-8-8-0 EDS Baltimore & Ohio £59.40
1268 4-6-6-4 Delaware & Hudson £67.80
1271 0-8-0 Indiana Harbor Belt . £38.00
1273 4-6-4 NYC shrouded Hudson £45.40
1279 4-6-4 Chesapeake & Ohio . £45.40
1280 2-8-4 American Railroads . £45.40
1283 4-6-2 Santa Fe £44.50
1285 4-6-2 SR Cresent Ltd £44.50
1520 2-8-4 Rich. Fred & Potomac £51.50
1528 4-8-4 FEF-3 UP black £58.50
1529 3 truck Hiesler LC&NCo ... £46.30
1530 4-6-2 C&A Alton Ltd £44.50
1536 2-10-2 Sla Baltimore & Ohio £58.50
1537 2-8-2 Great Northern 3380 £46.30
1538 2-8-2 GN with Vanderbilt tender £46.30
1500 GG-1 electric PRR dark green £33.60
1502 GG-1 American Railroads . £33.60
1503 GG-1 electric Amtrak £33.60
1504 GG-1 electric PRR silver .. £33.60
1664 GG-1 electric PRR Tuscan £33.60
1832 GE U25C diesel Santa Fe . £32.70
1925 EMD E8 pow + dummy NYC £35.40
1926 EMD E8 pow + dummy SF £35.40
1927 EMD E8 pow + dummy NP £35.40
1928 EMD E8 pow + dummy B&O £35.40
1929 EMD E8 pow + dummy Ill. Cent. £35.40

HO/OO BRITISH
312 Royal Scot set, 4-6-0 LMS loco + 4 passenger cars £101.00
329 Royal Scot set, 4-6-0 LMS Hector + 4 passenger cars .. £101.00
2937 4 LMS passenger cars £53.00
1348 LMS 4-6-0 Royal Scot £56.80
1350 LMS 4-6-0 Hector £56.80
2932 LMS 1st coach No 15604 . £13.70
2933 LMS 1st coach No 15933 . £13.70
2934 LMS 3rd brake No 16100 .. £13.70

N NORTH AMERICAN
9002 Little Freight of Baltimore set £30.50
9008 Capitol Ltd set £33.80
9012 Golden Spike set £44.00
9015 Chippewa Hiawatha set ... £42.00
9105 SW1500 diesel Burlington . £18.40
9106 SW1500 diesel Southern Pac. £18.40
9111 SW1500 dummy Santa Fe . £7.70
9112 SW1500 dummy GM demo. £7.70
9115 SW1500 dummy Burlington £7.70
9116 SW1500 dummy Southern Pac. £7.70
9130 Light 4-6-2 Milwaukee Road £22.00
9131 Light 4-6-2 Grand Trunk Western £26.50
9137 0-4-0T Balt & Ohio £18.40
9140 FM diesel Santa Fe £16.00
9141 FM diesel Union Pacific ... £16.00
9142 FM diesel Milwaukee Road £16.00
9143 FM diesel Pennsylvania ... £16.00
9144 FM diesel Southern Pacific £16.00
9145 FM dummy Santa Fe £5.50
9146 FM dummy Union Pacific . £5.50
9147 FM dummy Milwaukee Road £5.50
9148 FM dummy Pennsylvania . £5.50
9149 FM dummy Southern Pacific £5.50
9157 4-8-8-4 UP Big Boy £48.00
9196 4-6-2 SR Cresent Ltd £30.90
9197 4-6-2 Milwaukee Road £30.90
9198 4-6-2 Santa Fe £30.90
9199 4-6-2 Balt. & Ohio £30.90

N EUROPEAN
9001 Italian diesel freight set ... £22.50
9004 German Loreley Express set £48.00
9006 Holland-Italian Exp. set ... £38.50
9011 Nord Fleche D'or set £57.00
9160 Italian D341 diesel £16.20
9161 Italian E444 electric £27.40
9170 German V60 diesel £15.60
9171 Belgian V60 diesel £15.60
9173 German 4-6-2 BR10 ..... £38.00
9180 French SNCF 4-6-2 black . £41.60
9181 French Nord 4-6-2 brown . £41.60
9182 French SNCF 4-6-2 green . £41.60

O gauge ready to run
7105C Plymouth diesel Santa Fe £22.00
7182 German Plymouth diesel .. £22.00
7183 German 0-6-0T BR80 ..... £46.00
7184 German 216 diesel £35.50
7181 Italian E444 electric £50.50
7201 BU 4-6-0 IC Casey Jones .. £77.00
7283 BU 0-6-0T as 7183 but for USA £46.00
7561/1 Belgian open wagon £6.90
7563/1 Spatenbrau reefer van .. £8.70

Above prices valid while stocks last or until 31/1/81. Early closing Thursdays.
Orders under **£15** please add **50p**, orders over **£15** postage **FOC**

AHM, Airfix, Arnold, Athearn, Atlas, Campbell, Concor, Faller, Fleischmann, Grafar, H&M, Hornby, Kadee, Life Like, Lilliput, Lime, Mainline, Mehanotehnika, Minitrix, Peco, Pola, Rivarossi, Roundhouse, Superquick, Suydam, Walthers, Wrenn

ACCESS, VISA, AMERICAN EXPRESS & DINERS ACCEPTED

AIRFIX MODEL TRAINS COUNTY GUIDE TO RETAILERS

BEDS

JOHN BRANDHAM
Tools & Model Railways
EVERYTHING FOR THE ENTHUSIAST
14 Market Square, Leighton Buzzard
"OO" **372137** "N"

CARDIFF

JAMES & LENDON
192 Fidlas Road
(Near Cedars Hotel)
Llanishen, Cardiff CF4 5LZ
'00', 'N', '009'. All leading makes of railways and accessories stocked. Peco, Slaters, Ratio, Superquick, etc
0222 752563 Closed Tuesdays

KENT

WESTOYS
95 High Street,
Tonbridge
'N' 'OO' Gauge
Mon-Sat 9.00 — 5.30pm
Wed 9.00 — 1.00pm
Telephone — Ton. 354661

SUSSEX

MAINTRACK MODELS
79 QUEENS ROAD
Tel. 437428
Open: Mon-Sat 9.30 am — 5.30 pm
Closed Wednesday 1.00 pm

BIRMINGHAM

Model Shop
Proprietor: C.T. Perry
9 BURLINGTON PASSAGE, NEW STREET, BIRMINGHAM B2 4JX
Telephone: 021-643 3462

DEVON

TOP PRICES PAID FOR TOP QUALITY O GAUGE
We are always seeking good Hornby, B/L, etc. Also tinplate Minics, Meccano and Dinky Toys.
The Old Train Shop
2 BARTHOLOMEW STREET WEST, EXETER, DEVON
Telephone: 31548

MIDDLESEX

puffers
THE MODEL RAILWAY SPECIALISTS
Goroleen Ltd., 134a Kenton Road, Harrow Middx. HA3 0HG.
Tel: 01-907 3521
Open: Mon-Wed 10.30-6pm. Thurs 10.30-7pm. Fri 10.30-8pm. Sat 9.30-6pm.

ROBERTSON
41 VICARAGE FIELD HAILSHAM · SUSSEX
TEL. 841842

BIRMINGHAM

BOBS MODELS LTD.
520-522 Coventry Road, Small Heath, Birmingham B10 0UN. Tel: 021-772 4917
WE ARE THE MIDLANDS LEADING STOCKISTS OF AMERICAN RAILROADING EQUIPMENT INCLUDING BRASS LOCOS.
9.30-6.00 — Monday to Saturday
Early Closing — Wednesday 1.30pm

DEVON

HORNBY GAUGE 'O'
HORNBY DUBLO TINPLATE
MECCANO PARTS
DINKY, CORGI, LESNEY, BRITAINS
and many others
We buy and sell all day everyday except Sunday
THE OLD TRAIN SHOP
2 Bartholomew Street West
Exeter, Devon
Telephone: 31548

OXFORD

N GAUGE ROAD VEHICLES
White metal kits, accessories and transfers.
From your local model shop or post free direct. S.A.E. for full list.
THAMESHEAD TRANSPORT KITS
14 Laurel Drive, Southmoor, Oxon. OX13 5DG

WEST MIDLANDS

TENNENTS
SMALL TRAINS
77 High Street, Halesowen
Tel: 021-550 1266
Model Railway Specialists, Z to 5" gauge, Booksellers & Model Engineering Suppliers

BIRMINGHAM

021-357 2488
ALTON MODELS
897 WALSALL RD
GREAT BARR B42 1TN
Open 9.30am-6.00pm
Mon.-Sat.
Wednesday 9.30am-1.0pm

DEVON

Torbay Model Supplies,
59 Victoria Road,
Ellacombe,
Torquay.
Tel: Torquay 27764

SHROPSHIRE

BRIDGNORTH MODELS,
Sydney Cottage P.O. & Stores,
Sydney Cottage,
Bridgnorth,
Shropshire, WV16 4PP.
For TAYLECTRIC, H & M, LIMA, HORNBY, RATIO, AIRFIX, GEM, MAINLINE; WILLS, KINGS CROSS, MERIT, K'S, etc.

THE TRAIN SHOP
130 WALSTEAD ROAD
WALSALL 22128
Late Night Wednesday and Friday 9pm
Sundays 11am to 1pm
NO PARKING PROBLEMS — WE HAVE OUR OWN CUSTOMERS' CAR PARK

FREE KITS — YES, FREE KITS — THAT'S RIGHT, FREE KITS — LOOK AGAIN, FREE KITS

It may appear to be a misprint, but it isn't! This is a genuine offer of a FREE KIT. Despite the fact that our ranges are now available from nearly 1,000 stockists, we still receive many letters each week from potential customers who are unable to obtain our products locally. So, here then is our offer — SEND US THE NAME & ADDRESS of a MODEL SHOP that we are NOT SUPPLYING at present, and if we start trading with them, we will send YOU a FREE W&T whitemetal kit. Couldn't be simpler, could it? However, please ask the shop first for their agreement, as we do not wish to offend anyone with this offer.

Offer applies to any Country.

W&T MANUFACTURING (BIRMINGHAM) LTD.
220-222 WARWICK ROAD, GREET, BIRMINGHAM B11 2NB
TEL: 021-772 7309

Two new books . . .

BRITISH LOCOMOTIVES, 1894
by C.J. Bowen-Cooke.
A facsimile reprint of a classic work on the subject of steam traction from the Rainhill Trials to the end of the Victorian era . . . by the CME of the LNWR.
416 pages, casebound **£7.50**

COLLECTING AND CONSTRUCTING MODEL BUSES
by Michael Andress and D. Armitage
Essential practical guide, packed with information, pictures, drawings, with emphasis on 4mm scale models.
104 pages, soft covers **£2.75**

Available by post from:
GRESHAM BOOKS, THE GRESHAM PRESS, OLD WOKING, SURREY.

PAD-LOCK

COLOUR LIGHT SIGNALS with 12V bulbs.
complete, painted, all metal
2 ASPECT N/OO/O £1-75 ea.
3 ASPECT OO/O £2-00 ea
PUSH to make switches, 1 for 25p, 50 for £11
AUTO TRACTION & SIGNAL control modules
S.A.E. for 10 pages of data & prices. Orders 45p P&P.
PADS Electrical 45 Southwood Road, New Eltham, London SE9 (Postal only)

MODEL TRAINS

classified adverts

Please address your correspondence to
Model Trains
Classified Advertisement Department
Jackson-Rudd and Associates Ltd
Oldbourne House, 46/47 Chancery Lane, London WC2A 1JB

The publishers point out to readers that, while every care is taken to check the bona fide nature of all advertisements, they cannot accept any responsibility for disputes which might arise.

Rates 10p per word. Min. charge £3.
Box numbers £1 extra charge.
All advertisements must be prepaid.
Please state classification required.

Closing date for next available issue: December 18, 1980 (February 1981)

FOR SALE
POST PAID offers available while stocks last. Mainline Warship green £11.00. Patriot green or apple green £18.50. Collect B.R. black £14.00. Airfix Centenary coaches £3.95 each. Some Airfix blue box items available at excellent value, SAE list. Part exchange and second hand, no lists. SAE enquiries. METAGRAR, 108 Green Lane, Shelfield, Walsall, WS4 1RR.

OO LOCOS, wagons, coaches; Wrenn, Hornby, Mainline, Airfix; most mint, boxed. Also railway books. SAE list. 13 Heathgate, Yatton, Bristol. BS19 4DY. No dealers.

EXLEY OO coaches, for Midland, Southern and Great Western Railways, property of the late Mr. Exley. All mint. List SAE. The Ridge, Baslow, Bakewell, Derbyshire.

If you are interested in modelling aircraft, ships, and military subjects, look out for our sister publication
AIRFIX MAGAZINE
50p monthly
From your newsagent or model shop, or send 60p for a sample copy to:
Wells Gardner, Darton & Co., Faygate, Horsham, Sussex.

DART CASTINGS
NEW **4 mm Scale**
MILK FLOAT AND HORSE **£2.50**
From your local model shop, or post paid, direct from:
4 BRIDGETOWN, TOTNES, DEVON
S.A.E. for latest lists

THE SPECIALIST MAIL ORDER SERVICE
large SAE for lists
LGB . NOCH . JOUEF . ASTER . VAU-PE
WIKING . HERKAT . PREISER . MINITRIX
FALLER 'E' . RIVARROSSI . FALLER KITS
LILIPUT HO/HOe . FLEISCHMAN HO
MARKLIN 1/HO/Z . LIMA CONTINENTAL
monthly extra special offers list
Winchester Model Railway Centre
149 Alresford Rd., Winchester. SO23 8JZ

Keep your magazines for future reference in the new **MODEL TRAINS** Cordex binder, designed to hold your copies so that month by month they build up into a complete volume. Each binder holds at least 12 copies and is blocked on the spine with the title. The colour is an attractive shade of medium green. As each copy of the magazine is packed with useful material it is well worth keeping neatly this way on your bookshelf.
Price is **£3.96 each**, including post, packing and VAT (overseas readers 25p extra). Send your remittance with name and address to: **Model Trains (Binders), 4 Surbiton Hall Close, Kingston, Surrey, England.** Cheques or POs payable to 'Model Trains'. Please allow up to 3 weeks for delivery.

PEMBROKE MODELS
11 LORDS MEADOW WALK
KINGSBRIDGE, PEMBROKE, DYFED
At: Follow The Drum, 85 Queens Street, Pembroke, Dock, and The Post Office & Stores, Nesscliffe, Shropshire

LIMA

All Coaches	£2.35
Siphons	£1.75
08 Shunters	£7.45
Class 33 Bo Bo blue/green	£6.99
Deltics blue/green	£7.49
Westerns green/blue/maroon	£7.99
Warships green/blue/maroon	£7.99
45XX GWR green BR black	£9.99
P.O. wagons	95p
P.O. 12T vans	£1.15
Horse box	£1.25

SOUTHERN
MODEL RAILWAYS
('OO' & 'TT' SPECIALISTS)
13 Upper High St. Epsom Surrey. Tel: Epsom 26620
SOUTHERN BY NAME — NATIONAL BY NATURE
(SR: LMS: LNE: GU)
The enthusiasts' shop
•MAIN AGENTS FOR PECO, GAUGEMASTER, ECM AND H & M
•15% OFF LIMA • 10% OFF AIRFIX, MAINLINE, HORNBY & FARISH (N)
•STOCKISTS OF LOCOMOTIVE & ROLLING STOCK KITS IN 'N', 'TT', 'OO', PLASTIC KITS; SCENIC AIDS, ETC, ETC.
The 'TT' Department has a good selection in stock. Send 25p for "TT" list.
GOOD PRICES PAID FOR SECONDHAND 'TT'
Closed Monday **Late night Thursday ('Till 7 p.m.)**

SHINOHARA TRACK
The quality Japanese track for the discriminating modeller. Nickel-silver F.B. rail with live frogs, giving smooth efficient operation for all locomotives and rolling stock. Ties (sleepers) have a woodgrain finish and are pre-drilled for fixing spikes. Can be operated by point levers or by point motors.

HO/OO Code 100 (2.5mm railheight) 16.5mm gauge

No. 4 (20" radius) LH/RH Turnout	£2.25
No. 6 (48" radius) LH or RH Turnout	£2.50
No. 6 Curved (24"/20") LH or RH Turnout	£3.75
No. 8 (72" radius) LH or RH Turnout	£2.95
No. 8 Curved (36"/30" radius) LH or RH Turnout	£4.75
No. 4 Wye (40" radius) Turnout	£2.50
No. 6 Threeway (48" left/20" right) Turnout	£5.50
No. 6 Double Scissors Crossover (36" radius)	£8.95
No. 4 Double Scissors Crossover (20" radius)	£8.50
No. 6 Single Crossover (36" radius) LH or RH	£4.75
No. 4 Double Slip (24" radius)	£7.50
No. 6 Double Slip (48" radius)	£7.50
Crossings (30, 45, 60 or 90 degrees)	£2.50
Flexible Track per metre	£1.25
Double Guard Rail Flexible Track (ideal for tramways) per metre	£2.50
Single Guard Rail Flexible Track per ½ metre	£1.25
Railjoiners (12)	35p
Insulated Railjoiners (12)	25p

This track is to N.M.R.A. standards. It will accept British scale wheels, European N.E.M. standard wheels and all American wheels. It will not accept coarse scale wheels such as Marklin, Wrenn, Triang, Trix, etc.

No. 6 Universal Turnout (36" radius) will accept all wheels	£2.95

Code 100 track is compatible with Peco Streamline.

NEW! Double Slip	£8.95

N Gauge Code 70 (1.8mm rail height) 9mm gauge

No. 4 (16" radius) LH or RH Turnouts	£2.25
No. 6 (24" radius) LH or RH Turnouts	£2.50
Double Scissors Crossover (48" radius)	£8.95
Three Way Turnout	£5.50
No. 4 Wye Turnout	£2.50
No. 6 Curved Turnout LH or RH	£3.75
No. 4 Ladder Turnouts LH or RH (three turnouts in a line)	£6.95

Shinohara N track will accept all N scale, HOe, OO9 items, and can be used with Peco Streamline.

Postage and Packing 60p per Order, or can be purchased from our Shop, which is 5 mins. walk from Kings Cross station
ACCESS and BARCLAYCARD orders can be accepted over the phone
We are Open MONDAYS to SATURDAYS, 10.00 to 17.30 hrs.
166 Pentonville Road, Islington
London N1 9JL. Tel: 01-278 1019

VICTORS

HARBURN HOBBIES

LIMITED

67 ELM ROW

LEITH WALK, EDINBURGH, EH7 4AQ

IT'S EDINBURGH'S No. 1 MODEL RAILWAY SHOP!

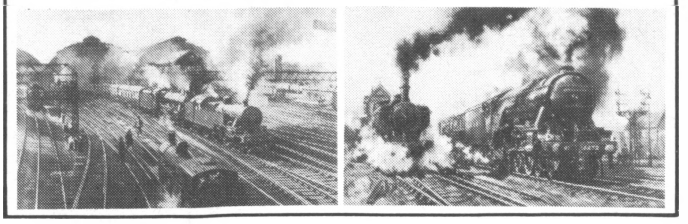
031 556 3233

ARTISTIC REFERENCE — AN AID TO MODELLING

Many fine artists have captured the nostalgia of steam. They have usually researched their subject matter well. This can aid your modelling and create a delightful decor too. Colour prints from about £3. Send 12p stamp for our new brochure of 50 prints. SATISFACTION GUARANTEED.

THE NEWCOMERS' GALLERY LIMITED

32 PORTLAND ROAD, EAST GRINSTEAD, RH19 4EA



HATTONS

DEPT MT, 180 SMITHDOWN ROAD LIVERPOOL L15 3JS

POSTAGE **50p** PER ORDER (UK) OVERSEAS P.O. RATES (less VAT) SAE FOR BUS N, O, OO or Tram Lists Access and Barclaycard welcome Tel. No. 051-733 3655
LAST MINUTE ORDERS FOR XMAS WELCOME

DISCONTINUED HORNBY

R357 Brush 2 Diesel **£7.50**; R060 Brush 47 Diesel (Green) **£11.50**; R150 B12 (black) **£10.95**; London Trans. Pannier **£12.50**; 4-6-2 Iron Duke & Tender (Motorised in Chassis) **£12.50**; R928/9 BR Red/Cream Coaches only) **£7.50** for 3; R127 Crane Truck **£2.95.**

SPECIAL HORNBY SALE

R535 GWR Freight Set	£17.95
R536 LBSC Local Goods Set	£26.95
R537 BR Diesel Freight Set	£32.50
R790 Inter City Set	£24.95
R540 Caledonian Psgr. Sets	£19.95
R541 High Speed Train Set (All include Power Unit, deduct £2 if not required)	£29.00
R538 Western Express Goods Set	£36.95
R539 Evening Star Super Freight Set	£48.95
R542 Duchess Mail Train Set	£46.95
R543 APT Set inc Track etc (Above Sets include Variable Power Unit, deduct £4 if not required)	£59.95
5 Car APT ONLY	£52.00
R053 LNER B17 Footballer Loco	£18.95
Ro55 LMS 4P 2/6/4T	£14.95
R059 GWR 2721 Pannier, Open Cab	£10.75
R349 King Henry VIII	£18.25
R313 Hagley Hall	£14.50
R352 Western Diesel, Maroon	£13.95
R354 Diesel Shunter	£7.96
BR or LMS 3F Tanks	£10.50
R852 Ivatt 2-6-0	£13.50
R305 Duchess of Abercorn	£18.95
R300 GWR Pannier Tank	£9.50
R311 LMS Patriot	£17.50
R303 Evening Star 2-10-0	£18.50
R077 GWR 0-4-0 No. 101	£6.50
R078 King Edward	£18.50
R322 Flying Scotsman	£16.50
R866 LNER B12 Green	£12.50
Class 25 Blue or Green	£9.95
Class 29 Blue or Green	£9.95
R069 HST Power and Dummy Power Car	£16.95
R057 Caledonian Saddle Tank	£7.20
R219 Cale 4-wheeled Coach	£1.75
R480 Catalogue 1978, 1979 or 1980	45p
R160 Track Plans Book	75p
R369 Class 37 Co-Co	£10.50
R073 Class 47 Green 'Mammoth'	£13.75
R309 BR Mallard	£17.50
R989 Hornby Book of Trains	£4.25
R413/6 LMS or BR Royal Mail Set	£5.75
R506 Goods Shed	£2.75
R911 ¼ amp Controller	£3.30
R044 Passing Contact Switch	£1.10
R633 Freightliner Wagon	£2.25
R126 Car Transporter	£2.75
R223 Pullman Compo or B/E	£4.25
R421-R478 GWR, SR, LMS, LNER OR Red/Cream Coaches	£3.25
R188 GWR Station Kit	£2.95
R479 LNER Sleeper	£3.25
R454 GWR Restaurant	£3.25
R417-R420 Buffet or Sleeper	£3.25
R417-R420 Inter-City Coach B/E Buffet or Sleeper	£3.25
R449 Coach Lighting Set	£1.60
R245 Shell/BP Tank Wagon	£1.85
3 Red/Cream BR Mk I Coaches (2 Compos & 1 B/end) for	£7.50
R101 Bannockburn Coke	£1.05
R425-7 1st, 2nd, Buffet Mk III Coaches	£3.25
R234 45 ton GLW Closed Van	£2.35
R722 Kit Kat Van	£1.55
R731 Gulf Tank Wagon	£1.50
R222 Kelloggs Van	£1.05
R137 McVities Closed Van	£1.25
R716 Scarwood 5-plank Wagon	£1.30
R514 Platform Canopy	£1.75
R086 Home & Distant Signal	£2.20
R087 H&D Junction Signal	£2.90
R089 Signal Extension Set	£2.25
R900 Power Unit	£15.00
R902 Circuit Controller	£7.50
G100 Livesteam 3½" Gauge Rocket	£69.95
G104 L&M Coach for Rocket	£24.25
R635 Dbl Track Level Crossing	£2.30
R415 Ore Wagon Set	£6.75
R400 Signal Control Set	£5.75
6 Circles R605 Track for	£10.00
R510 Platform Shelter	£1.50
R511 Waiting Room	£2.75
R512 Booking Hall	£3.75
R513 Platform Fencing	£1.00
R504 Engine Shed	£2.50
R516 Diesel Maintenance Depot	£4.95
R590 Station Halt	£3.25
R593 Town Station	£9.25
R592 Main Line Station	£5.50
R591 Branch Line Station	£4.75
R405 Colour Light Signal Set	£3.25
R213 GWR 4-wheeled Coach	£1.75
R739 75 Ton Crane	£7.75
R505 Water Tower	£2.25
R410 Turntable	£8.50
R411 Turntable Motoriser	£4.50
R740 Anglo Continental Van	£1.95
R663 Point Remote Control	£2.50
R503 Signal Box	£2.20
R047 On/Off Switch	£1.10
R046 Two-way Switch	£1.10
5 Mixed Gds Stock (Our choice)	£5.50
R083 Buffer Stop	25p

SPECIAL HORNBY SALE

R238 MGR Hopper Wagon	£2.40
R460 Straight Platform	50p
R464 Platform Ramp	50p
R657 Girder Bridge	£1.75
R658 Inclined Piers	£1.40
R659 High Level Piers	£1.15
R660 Elevated Track Sidewalls	£2.75
R600 Straight	27p
R601 Double Straight	45p
R602 Power Clip	40p
R603 Long Straight (Min 8)	75p
R604 1st Radius Curve	25p
R605 1st Radius Double Curve	30p
R606 2nd Radius Curve	30p
R607 2nd Radius Double Curve	40p
R608 3rd Radius Curve	30p
R609 3rd Radius Double Curve	40p
R610 Short Straight	24p
R632 Y Point	£1.75
R612/3 L/H & R/H Points	£1.75
R614/5 Diamond Crossings	£1.75
R616 Isolating Track	60p
R617 Uncoupling Ramp	40p
R629 Level Crossing	£1.10
R624/5 Point Underlays	55p
R630/1 Curved Point Underlay	70p
R634 or 7 Y of Diamond Underlay	55p
R638 Roll of Underlay	£2.20
R640/1 Curved Points	£2.35
R643 ½ Curved 2nd Rad	22p
R950 Zero 1 Master Controller	£39.95
R951 Zero I Slave Controller	£10.95
R955 Loco Chips	£6.40
R956 Zero I Points Op Modules	£11.95

WIRE, MOTORS, CHASSIS, BODIES

100 metre reels of wire (choice of colours) for **£2.20**; Hornby Loco Chassis incl. motor 0-6-0 Tank **£7.50**; Scotsman **£10.45**; Ivatt **£9.50**; B12 **£8.25**; X04 Motors **£2.95**; 5 pole Replacement Motors **£3.40**; X404 Point Motors **£1.60**; Bodies plus Tenders for Flying Scot **£5.50**; SR Sir Dinian **£5.50**; LMS Maroon Princess **£5.50**; Bodies for GWR Pannier **£2**; Evening Star **£1.50**; TV Suppressors 10 for **£1.10**; Evening Star, Duchess, Britt. Motorised Tenders **£8.35**; R450 2P LMS Body and Tenders **£5.50**; Lima Metal Pinpoint Wheels on Axles, 12 Axles **£1.60.**

NEW WRENN BARGAINS

SAVE UP TO £7 ON THESE STURDY LOCOS

NEW "Silver Link" A4 BR Grn **£26.95**; "GRT Snipe" A4 LNER Grn **£26.95**; "Garnet" A4 LNER Blk **£26.95**; Brighton Belle 2 Car Emu Choc/Cream or BR Blue **£29.95**; Pullman Coaches, all types **£4.50**; City of Stoke LMS Black; Liverpool LMS Maroon; Carlisle or London BR Maroon; Glasgow or Manchester BR Blue; Edinburgh or B'ham BR Grn; or Duchess of Hamilton **£26.95 each**; A4 Locos — Mallard, Golden Eagle, Gresley LNER Blue **£26.95 each**; Castle Locos — Cardiff BR, Devizes GWR, Windsor BR Blue, Clun, Bristol **£26.95 each**; BR, LMS or LNER 2-8-0 **£26.95 each**; West Countries — Dorchester BR, Clanline, Barnstaple BR, Eddystone, Lyme Regis SR **£26.95 each**; 2-6-4 Tank Locos — BR Blk, LMS Maroon, SR, GWR or Caledonian **£21.95**; BR, LMS OR LNER 0-6-2 Tanks **£12.50**; 0-6-0 Tanks all types **£9.50**; New Esso, Mobil, or Shell Tank Wagons **£2.35.**

RELCO TRACK MAINTAINERS £6.50

NEW AIRFIX GMR BARGAINS

Castle Loco GWR or BR **£18.95**; Centenary Coacher GWR or BR **£4.25**; LMS or BR 4F **£10.95**; BR (Black) or GWR (Green) Prairie Tanks **£9.50**; BR or LMS Royal Scot **£16.45**; LMS Maroon or BR Red/Cream Stanier Coaches and Brake Ends **£2.95**; GWR or BR Auto-Coaches **£3.75**; AIA-AIA Diesels **£8.50**; 1st, 2nd or Brakend Mk 11D Coaches **£3.50**; LMS or BR Non-Corridor (Suburban) Maroon Coaches **£3.75**; GWR or BR Conflat Wagons with Containers **£1.75**; New, Persil, Huntley & Palmer, Tizer or Lyons Box Vans **£1.65**; BR Brake Vans **£1.40**; Lowmac & NCL Trailer **£1.38**; New Alloa or ICI 5-Plank Wagons **£1.45**; 7-Plank LNER 'Mr. Therm' or Carlton **£1.55**; 21T Hopper Wagon BR **£1.65**; Esso or Shell Petrol Tank Wagon **£1.80**; GWR or BR B Set Coaches **£3.45**; GWR or BR 14xx 0-4-2 Tanks **£9.95**; Catalogue **40p.**

MAINLINE SALE

SAVE UP TO 40%!! ON LIST PRICES

BR J72 0-6-0 Tank Loco	£6.50 (£11.50)
LNER J72	£7.75 (£11.50)
BR Class 4 4-6-0 4MT green	£12.95 £22.50)
BR 4 4-6-0 black 4MT	£12.95 (£22.50)
BR Class 7P Royal Scot	£15.50 (£23.30)
BR Blue Class 45 Peak diesel	£9.50 (£16.00)
Mk 1 coaches, WR choc/cream or BR crimson/cream livery. 2nd Corr and brakes 2nd Corr	3 for £7.50 (£12.00)
6 assorted goods stock for only	£6 (min £10.00)
Circle of track (large or small rad.)	£2 or 6 circles for £9
GWR BR Black or BR Green Collet	£13.95
New — Jubilee loco BR Green, LMS Black or LMS Crimson	£18.75
New — Patriot LMS, BR Black, BR Green, apple green	£18.75
New — Warship diesel maroon, green or blue	£11.50
New — Crimson Scot with steamsound	£25.75
New — BR Black Patriot with steamsound	£25.75

All the following wagons only **£1 each:**
5-Plank Warrener; BR Bauxite or Ellis & Everard; 7-Plank Persil; England's Glory or BR Grey; Coke TCD or Bedwas; BR Vent Van: BR or NE Guards Van.
Following Tank Wagons **£1.20 each:**
BP; Crossfield; Mollasses or ICI.

PECO STREAMLINE OO TRACK

98p yd. (N/S) minimum 12 yds. by post, 25 for **£21**; (concrete or wood) with steel rails **75p** yd., 25 for **£14.96** (concrete or wood); Points Set Track **£2.00**; small rad. **£2.20**; med. rad. **£2.60**; 'Y' Points **£2.20**; Point Motor **£1.20**; Points or Curve **£2.80**; Large rad. points **£2.80**; Short Crossing **£2.00**; Long Crossing **£2.20**. Large radius 'Y' Points **£2.60**; Electrofrog or Finescale Points **10p extra**; Fishplates **35p**; Point Underlay **90p pair**; D. Slip **£8.50**; Roll of underlay **£1.50.**

NEW H & M POWER UNITS

Duettes **£19.95**; DC Control Unit **£9.50**; Clippers **£14.50**; Minors **£14.95**; CUI/LC Controller **£4.95**; Selector Units **£9.50**; Switchblades **£1.75**; SM1 Motor **£1.60**; SM3 Motor **£2.95**; Powermasters **£21.00**; HM 3000 Inertia Controllers **£32**; Flyers **£9.95**; Rocket **£7.95**; Executives **£16.95**; Loco Tester **£11.00.**

NEW HORNBY DUBLO 2-RAIL

Lineside apparatus for TPO **55p** (6 for **£2.20**); R/H Hand Operated Point **75p**; Isolation Rails, 12 for **80p**; 4078 Sleeping Cars **£4.00**; 4060 WR 1st Corr. Coaches **£7.50**; 4061 WR 2nd Corr. Coaches **£7.50**; New Cavendish Book "History of Hornby Dublo" **£18.50.**

NEW N GAUGE BARGAINS

PECO Streamline Track N/S 25 yards for **£16.95**; Med. Rad. Points **£2.20;** Large Rad. Points **£2.50**; Curved Points **£2.50**; Crossings **£2.20**; Jubilee **£28.50**; **MINITRIX** Locos "Evening Star" (Grn.) **£25.95**; 0-6-0 Dock Tank **£11.50**; 2MT, 2-6-2T Tank Locos **£18.50**; Britannia **£18.95**; Warship Diesels **£18.50**; Blue or Green; 2MT 2-6-0 Tenders **£18.96**; BR 2-10-0 **£24.95**; Cl.26 Tyne 2 Diesels **£17.95.**

SCALEXTRIC SALE

100 Set, List £27.63, from us **£22.50**; 200 Set, List £38.50, from us **£31.50**; 300 Rally Set, List £44.85, from us **£35.85**; 400 Set, List £51.50, from us **£41.95**; 500 Set, List £64.50, from us **£54.50**; 500TT Set, List £51.50, from us **£42.50**; all sets include power unit. Large SAE for complete list and Free Catalogue.

LIMA OO SCALE SPECIAL OFFERS

Deltics **£8.50**; 94xx Pannier **£8.50**; Western Diesels: Blue, Green, Maroon or Sand **£8.50**; 0-6-0 Diesel Shunters **£7.50**; Warship Diesel BR Blue, Green or Maroon **£8.25**; BR Prairie Tank **£9.50**; GWR Prairie **£9.50**; J50 Tanks, BR **£6.95**; King Class **£16.95**; Bo-Bo Diesels **£6.95**; Operating Container Terminals **£5.45**; Mk. IIB Inter-City Coaches **£2.75**; BR Maroon, Choc & Cream, Crimson/Cream, SR Green Improved Coaches **£2.75** (Compos. B/E's Dining or Full Brakes); CCT Vans **£1.80**; Syphon G Vans — GWR, Palethorpes or BR Blue **£2.20 each**; **BARGAIN:** 6 Mixed Goods Stock for **£5.50** (our choice); BR, Tilcon or ARC Stone Hopper Wagon **£1.60 each.**

NOVO GAUGE O

Battery operated Tank Goods Sets **£8.50**; Hymek Pass Sets incl. Station **£12.50**; 0-4-0 Tank Loco **£4.50**; Hymek Diesels **£7.50**; Tipping Wagons **£1**; BR Mk. II Bogie Coaches: 2 for **£6**; Mineral Wagons **£1.50**; Level Crossing **£1**; Station with Bell **£1.50**; Oval Track **£1**; 6 Oval Tracks for **£4.50**; Signals **75p; Mamod Live Steam Gauge O Sets** fantastic value **£62.50**; Tank Loco only **£38.50.**

WHY PAY OVER £1 FOR A SWITCH?

We have On/Off or Two-Way Switches at only 10 for **£1.50.**

RAILMAIL Model Railways

HORNBY LOCOMOTIVES

R053	Manchester United	£19.99
R055	LMS 4p	£14.99
R057	Caledonian	£7.50
R059	2721 Class 0-6-0	£10.99
R300	GWR Pannier	£8.99
R301	LMS Jinty	£9.99
R302	BR Jinty	£9.50
R303	Evening Star	£18.00
R305	Duchess of Abercorn	£17.50
R309	Mallard	£17.50
R331	Duke of Sutherland	£17.00
R313	Hagley Hall	£13.99
R315	LBSC Tank	£9.99
R322	Flying Scotsman	£17.50
R333	GWR 0-4-0 Tank	£6.99
R349	King Hendry	£17.50
R842	Class 5 Red	£16.00
R852	Ivatt Green	£14.00

HORNBY DIESELS

R326	Class 25 Blue	£9.99
R327	Class 25 Green	£9.99
R328	Class 47 Mammoth	£12.99
R332	3 Car HST	£18.99
R335	Hymeck	£9.50
R337	Class 29 Blue	£9.50
R336	Class 29 Green	£9.50
R354	Diesel Shunter	£8.50
R368	Western Courier	£12.99
R369	Class 37 Co Coj	£10.99

COACHES

R223	Pullman Coach	£3.99
R233	Pullman Brake	£3.99
R213	GWR 4 Wheel	£1.80
R219	Caledonian Coach	£1.80
R416	Royal Mail Set	£5.99
R417	Intercity Coach	£3.50
R418	Intercity Brake	£3.50
R419	Intercity Buffet	£3.30
R420	Intercity Sleeper	£3.50
R425	Mk 3 1st Class	£3.50
R426	Mk 3 2nd Class	£3.50
R427	Mk 3 Buffet	£3.50
R421	BR Red Cream	£3.50
R424	BR Red Cream Brake	£3.50
R441	SP composite	£3.50
R445	SR Brake	£3.50
R456	GWR Coach	£3.50
R457	GWR Brake	£3.50
R458	GWR Restaurant	£3.50
R474	LMS Composite	£3.50
R475	LMS Brake	£3.50
R477	LNER Composite	£3.50
R478	LNER Brake	£3.50
R479	LNER Sleeper	£3.50

ZERO 1

R955	Loco Module	£6.99
R950	Master Control	£39.99
R951	Slave Control	£11.99

HORNBY TRACK

R361	Siding Set	£3.99
R362	Passing Loop	£4.99
R363	Twin Track Extension	£4.99
R364	Large Oval	£7.50
R600	Straight	33p
R601	Double Straight	60p
R604	Curve	35p
R605	Double Curve	45p
R606	Curve	35p
R607	Double Curve	50p
R608	Curve	40p
R609	Double Curve	50p
R610	¼ Straight	27p
R612	LH Point	£1.75
R613	RH Point	£1.75
R614	LH Diamond	£1.65
R615	RH Diamond	£1.65
R620	Rerailer	70p
R632	Y Point	£1.99
R628	Curve for Y	35p
R640	LH Cur Point	£2.50
R641	RH Cur Point	£2.50
R643	Curve	27p
R410	Turntable	£8.50
R411	Turntable Motor	£4.50

HAMMANT & MORGAN POWER UNITS

H&M Flyer	£9.99
H&M Rocket	£7.99
H&M Clipper	£14.50
H&M Duette	£18.99
H&M Multipack	£8.99
H&M 3000	£29.50
H&M SM3 Point Motor	£3.00
H&M Pack 6 SM1 Point Motors	£7.50
H&M Loco Tester	£9.99
H&M Belco Unit	£8.00

LIMA COACHES

BR Maroon Coach	£2.75
BR Maroon Brake	£2.75
BR Restaurant Car	£2.75
BR Maroon Full Brake	£2.75
BR Red Cream Coach	£2.75
BR Red Cream Brake	£2.75
BR Red Cream Restaurant	£2.75
BR Red Cream Full Brake	£2.75
BR Green Coach	£2.75
BR Green Brake	£2.75
BR Green Buffet	£2.75
BR Green Full Brake	£2.75
BR Choc Cream Coach	£2.75
BR Choc Cream Brake	£2.75
BR Choc Cream Buffet	£2.75
BR Choc Cream Full Brake	£2.75
Intercity Corridor	£2.75
Intercity Open	£2.75
Intercity Brake	£2.75
Intercity Mk 1 Composite	£2.75
Intercity Buffet	£2.75

AIRFIX LOCOMOTIVES

GWR Prairie	£10.99
BR Prairie	£10.99
14xx GWR	£10.99
GWR Castle	£16.99
BR Castle	£10.99
BR Fowler	£12.50
LMS Fowler	£12.50
BR Royal Scot	£15.99
LMS Royal Scot	£15.99
AIA Diesel Blue	£9.09
AIA Diesel Green	£9.99

Coaches

BR Intercity 1st	£3.20
BR Intercity 2nd	£3.20
BR Intercity Brake	£3.20
BR Red Cream Coach	£3.20
BR Red Cream Brake	£3.20
BR Sub Coach	£3.20
BR Sub Brake	£3.20
LMS Corridor Coach	£3.20
LMS Corridor Brake	£3.20
LMS Surburban Coach	£3.20
LMS Surburban Brake	£3.20
BR Autocoach	£3.50
BR B Set Coach	£3.20
GWR Autocoach	£3.50
BR Autocoach	£3.50
GWR Centenary Coach	£3.50
BR Centenary Coach	£3.50
GWR Centenary Brake	£3.50
BR Centenary Brake	£3.50

RAILMAIL ASSORTMENT

6 Airfix Wagons £8.99
(Our Assortment)

JOUEFF

Class 40 Blue	£11.99
Class 40 Green	£11.99
Joueff Mk 3 Coach 1st	£3.75
Mk 3 Coach 2nd	£3.75
Mk 3 Buffet	£3.75

LIMA

GWR Prairie	£9.99
GWR Pannier	£8.50
BR Prairie	£9.99
BR Pannier	£8.50
Deltic Blue	£7.50
Deltic Green	£7.50
Class 33 Blue	£7.50
Class 33 Green	£7.50
Warship Blue	£7.50
Warship Green	£7.50
Warship Maroon	£7.50
Western Sand	£7.99
Western Blue	£7.99

MAINLINE LOCOMOTIVES

J72 Joem	£7.99
J72 Early Crest	£7.99
Peak Diesel Blue	£10.50
Peak Diesel Green	£10.50
Warship Maroon	£9.50
Warship Blue	£9.50
Warship Green	£9.50
Std Class 4 Black	£8.99
Std Class 4 Green	£8.99
Royal Scot BR Green	£16.99
Royal Scot LMS Black	£16.99
GWR Collett	£13.99
BR Collett Black	£12.99
BR Collett Green	£12.99
LMS Patriot	£17.50
BR Green Patriot	£17.50
BR Apple Green Patriot	£17.50
BR Black Patriot	£17.50
BR Green Jubilee	£17.50
LMS Black Jubilee	£17.50
LMS Maroon Jubilee	£17.50

STEAMSOUND

LMS Royal Scot Preserved	£23.50
LMS Patriot	£23.50

COACHES

BR Intercity Mk 1	£2.75
BR Intercity Brake	£2.75
BR Choc. Cream	£2.99
BR Choc Cream Brake	£2.99
BR Maroon Coach	£2.99
BR Maroon Brake	£2.99
LMS Panelled Coach	£3.50
LMS Panelled Brake	£3.50
BR Red Cream Panelled	£3.50
BR Red Cream Panelled Brake	£3.50
BR Panelled Coach	£3.50
BR Panelled Brake	£3.50

RAILMAIL WAGON ASSORTMENT

3 Tankers	£4.50
3 Coke	£4.25
3 Hoppers	£4.25
3 7 Plank	£3.75
3 5 Plank	£3.50

(Our Assortment)

GRAFAR N LOCOMOTIVES

GWR Pannier	£9.99
BR Pannier	£9.99
GWR Prairie	£13.50
BR Prairie Green	£13.50
BR Prairie Black	£13.50
LNER GP Tank	£9.99
SR GP Tank	£9.99
LMS GP Black	£9.99
LMS GP Maroon	£9.99
BR GP Tank	£9.99
Diesel Shunter BR Blue	£8.99
Diesel Shunter BR Green	£8.99
Diesel Shunter LMS Black	£8.99
Diesel Shunter SR Black	£8.99
GWR Hall	£15.99
BR Hall	£15.99
LMS Black 5	£19.99
LMS Class 5 Maroon	£19.99
BR Class 5 Black	£19.99
LMS Compound Black	£13.99
LMS Compound Maroon	£13.99
BR Compound Black	£13.99
S&DJR Compound Blue	£13.99
Caledonian Compound	£13.99
BR Battle of Britain	£15.99
BR Merchant Navy Blue	£15.99
SR Merchant Navy Green	£15.99

COACHES

Surburban Coach	£2.25
Surburban Brake	£2.25
Mainline Coach	£2.25
Mainline Brake	£2.25

The above available in GWR, LMS, SR, LNER or BR Liveries

4 Wheeled Coach	£1.75
4 Wheeled Brake	£1.75

The above available in GWR, LMS, SR, LNER, S&DJR and Caledonian Liveries

Mk 1 Coach	£2.50
Mk 1 Brake	£2.50

Available in Maroon, Blue, Grey, Choc, Cream, and BR Green Liveries

Pullman Coach	£2.99
Pullman Brake	£2.99
5 Assorted Open Wagons	£4.99
5 Assorted PO Vans	£5.25
5 Assorted Open Hoppers	£5.25
5 Assorted Closed Hoppers	£5.25
LH Points	£1.50
RH Points	£1.50
Y Point	£1.50
Diamond Crossing	£1.50

HOW TO ORDER

MAIL ORDERS TO WATFORD ONLY

All orders must be prepaid. Cheques, P.O. payable to RAILMAIL.
We also accept Access, Barclaycard, Visa, Hobbycard, and American Express Card holders can telephone on our HOTLINE — WATFORD 46966. Our answering machine will accept your orders after business hours.
Postage: Add 50p per item. Max. charge £1.00.
Export: These offers limited to UK. Ask for export costs.

ALL PRICES QUOTED IN THIS ADVERT INCLUDE VAT AT 15% AND WILL BE HELD UNTIL JANUARY 15th, 1981.

RAILMAIL MODEL RAILWAY CENTRES

65 Vicarage Road, Watford, Herts.
Tel: (0923) 46966

OPEN 9am-5pm Mon-Fri
Sun 10am-2pm DECEMBER 7th, 14th, 21st, 28th ONLY

165a St. Vincent Street, Glasgow, C1
Tel: 041 221 3111

OPEN 9am-5pm Mon-Fri, 12 noon-4pm Sun

BOTH BRANCHES OPEN BOXING DAY 10am-2pm
CLOSED CHRISTMAS DAY AND NEW YEAR'S DAY

CREDIT

We can offer Credit Facilities to customers, subject to status, these facilities are offered through Club 24 Ltd., Electapost, Clay Pit Lane, Leeds on behalf of Railmail.
APR 30.60% (Bankers Order)
APR 34.40% (Payment Book)

Typical Examples

Customers paying £5.00 per month, Credit Limit £120.00 (Bankers Orders); Customer paying £3.00 per month, Credit limit £100.00 (Payment Book). Rates may vary at our option.

Instant Credit

To callers at either of our RETAIL PREMISES, we can OFFER INSTANT CREDIT of up to £120.00 providing that the customer has a CURRENT BANK ACCOUNT, can produce a VALID CREDIT CARD or CHEQUE CARD, and can produce proof of IDENTITY.

Consumer Credit Act

Under the Consumer Credit Act we will provide a written quotation on request, please contact our CREDIT OFFICE at WATFORD.

VISIT OUR STAND AT THE MODEL ENGINEERING EXHIBITION, WEMBLEY, 1st-10th JANUARY 1981

BRITAINS No1 SUPPLIER OF MODEL RAILWAYS

BEATTIES

"There's an easy way to pay with our Charge Account."

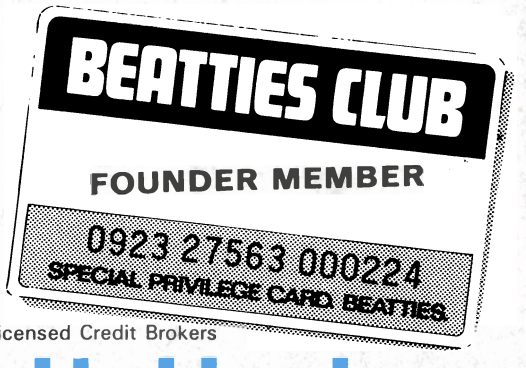
With a Beatties Charge Account card you may buy everything you need for your hobby – from model railway equipment and accessories, to radio control cars and kits – at any of our 17 countrywide shops or by mail order. Select your goods from our terrific range of stock, then spread your repayments sensibly over a period of time. As a Beatties cardholder, you can keep abreast of the very latest developments in YOUR hobby.

HOW IT WORKS. Choose how much you want to pay each month on a banker's order – anything between £5 and £20. You are then entitled to purchase goods up to twenty times the monthly payment. For example, if you elect to pay £20 per month, this will enable you to buy up to £400 worth of goods. Simply present your card and sign the sales voucher. You will receive statements at three monthly intervals, so that you always know where you stand. INSTANT CREDIT FACILITY. If you already hold a bank credit card or a cheque guarantee card plus identification (driving licence, etc.) then up to £100 of credit may be made available immediately at any Beatties shop. This means you can choose the products you wish to purchase and take them away with you. Ask about this instant credit facility at any of our shops. WHAT IT COSTS. An interest charge, currently 2%, will be added to the amount outstanding on your account each month EQUIVALENT TO AN ANNUAL RATE OF CHARGE OF 26.8%. This rate could vary at the option of Barclaycare. HOW TO APPLY. To apply for your Beatties Charge Account Card, simply complete the application form and banker's order and hand it in at any Beatties shop. You must be over 18 and have a current Bank Account. Your application will be forwarded to Barclaycare* and , if approved, you will receive your Beatties card (normally within 21 days) which you may use at any of our 17 shops, or through our mail order service. **This credit card scheme is operated by Barclaycare, Northampton NN1 1SG. Tel: (0604) 21100 on behalf of Beatties of London Limited, 13/15a High Street, Hemel Hempstead, Herts HP1 3AD. Tel: (0442) 41351. Licensed Credit Brokers.* CHARGE ACCOUNT EXAMPLE. You elect to pay £10 per month, allowing purchases of goods to the value of £200. During the first month you spend £100 and make one repayment.

Goods purchased to the value of	£50
Interest at 2%	£1
	£51
Less monthly repayment	£10
Total outstanding	£41
Total still available to spend	£159

A GREAT DEAL IN STORE FOR YOU

BEATTIES



Licensed Credit Brokers

Europe's leading model and hobby shops

CENTRAL LONDON: 112, High Holborn, WC1V 6JS. 01-405 6285/8592
SOUTH-EAST LONDON: 210, Lewisham High Street, SE13 6JP. 01-852 0449
***NORTH LONDON:** 10, The Broadway, Southgate, N14 6PN. 01-886 4258
NORTH LONDON: 104/106 High Road, Wood Green, N22 6HE. 01-888 0937
BIRMINGHAM: 26, South Mall, B'ham Shopping Centre, B2 4XD. 021-643 8604
BLACKPOOL: 19, Houndshill Centre, Victoria Street, FY1 4HU. 0253-26461
BRISTOL: 17/19, Penn Street, BS1 3AW. 0272-20259
ESSEX: 7/11, High Street, Romford, RM1 1JU. 0708-24283
HERTS: 70, The Parade, High Street, Watford, WD1 2AW. 0923-27563
KINGSTON-UPON-THAMES: 30/32, Eden Street, KT1 1EP. 01-549 5464
LIVERPOOL: 36/37, Dawson Way, St John's Centre, LI1 1J. 051-709 0799
LEEDS: 16/18 King Charles Street, LS1 6LT. 0532-456611
MANCHESTER: 4/6, Brown St. off Market St. M2 1EE. 061-834 7780
NEWCASTLE: 43/47, Pilgrim Street, NE1 6QE. 0632-24161
NOTTINGHAM: 3, Mount Street, NG1 6JW. 0602-411693
SHEFFIELD: 38, Pinstone Street, S1 2HN. 0742-77864
SOUTHAMPTON: 114, East Street, SO1 1HD. 0703-24843

**Mail Orders to Southgate branch*

Typeset by Manson Graphic Ltd, Hemel Hempstead, and printed by Blackfriars Press Ltd, Leicester, England